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NOTES OF

A THOUSAND MEN

*DAVID K. MORRIS*

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*of London.*

*27 March, 1891.*

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NOTES  
OF  
A THOUSAND MEN,

AND SOME THINGS THEY DID IN  
*Art, Literature, War, Government, Science,  
and Industry,*

Arranged in Groups, and in Order of Time.

BY  
DAVID K. MORRIS.

— ◆ —  
LONDON:

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—  
1891.



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*The Computer*

THE names in these lists are chosen from much larger lists gathered by a young student from many sources during several years, from standard works of reference, from periodicals, from works on special subjects, and with the help of friends. Perhaps they may serve to bring more clearly before the mind the order of events, or steps of progress.

DAVID K. MORRIS.

13, *Somers Place, Hyde Park,*  
*November, 1890.*



# NOTES OF A THOUSAND MEN.

## I.—ART.

### ARCHITECTURE.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Chersiphron ... ..	B. C.	Crete.	B. C.	...	Temple of Diana at Ephesus, about 560 B.C.
Callimachus ... ..	...	Corinth.	...	...	Corinthian capital, about 500.
Ictinus ... ..	...	Athens.	...	...	Parthenon, Athens ; Temple of Apollo at Phigaleia, about 440.
Vitruvius ... ..	...	Verona ?	about 27 A.D.	...	First Treatise on Architecture.
Anthemius ... ..	A. D.	Tralles (Lydia).	534	...	St. Sophia, Constantinople.
William of Sens... ..	...	...	...	...	Canterbury Cathedral, 1174—78 A.D.
William the Englishman	...	...	...	...	Canterbury Cathedral, 1178—84.
Coucy, R. de ... ..	...	...	...	...	Rheims Cathedral, about 1212.
Riehl, Gerhard von ... ..	...	...	...	...	Cologne Cathedral, about 1257.
Steinbach, Erwin von ... ..	...	...	...	...	Strasburg Cathedral, 1277—1318.
Lapo, Arnolfo di ... ..	1232	...	1310	Florence.	Cathedral, Florence ; S. Croce, and Palazzo Vecchio.
Giotto ... ..	1276	near Florence.	1336	...	Campanile, Florence Cathedral.
Gmund, Heinrich von ... ..	...	...	...	...	Milan Cathedral, 1391.
William de Wykeham ... ..	1324	Wykeham.	1404	...	Windsor Castle ; Winchester Cathedral.
Brunelleschi, F.... ..	1377.	Florence.	1444	Florence.	Cupola of the Cathedral, Florence ; Palazzo Pitti, S. Lorenzo, S. Spirito.
Boblinger, Mat.... ..	...	Esslingen.	...	...	Ulm Cathedral, 1474.
Bramante ... ..	1444	near Urbino.	1514	...	St. Peter's and part of Vatican ; Escorial.
Sinan ... ..	...	...	1548	...	Suleimanie (Mosque), Constantinople.
Michael Angelo ... ..	1475	Caprese (Tuscany).	1564	Rome.	St. Peter's, Rome.
Delorme, Ph. ... ..	1518	Lyons.	1577 ?	...	Tuileries.
Palladio ... ..	1518	Vicenza.	1580	Vicenza.	Palladian Style, Venice and Vicenza.
Thorpe, J. ... ..	...	...	...	...	Treatise on Architecture.
Jones, Inigo ... ..	1572	London.	1652	...	Holland House, London ; Longford Castle, Wilts, 1607.
Austin de Bordeaux ... ..	...	...	...	...	Whitehall.
Mansart, F. ... ..	1598	Paris.	1666	Paris.	Taj Mahal (near Agra), about 1650.
					Mansarde roof. Palaces of Versailles, Marly, and Trianon, Hôtel des Invalides.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Bernini, G. L. ... ..	A.D. 1598	Naples.	A.D. 1680	Rome.	Portico and interior of St. Peter's, Rome.
Perrault, Claude ... ..	1613	Paris.	1688	Paris.	Louvre façade.
Wren, C.... ...	1632	Knole (Wilts).	1723	Hampton Court.	St. Paul's Cathedral, Greenwich Hospital, City of London churches, and Monument.
Vanbrugh ... ..	1666	London.	1726	...	Blenheim; Castle Howard.
Brown, L. (Capability)... ..	1715	Kirkharle Northumb.	1783	Hampton Court.	English gardens.
Chambers, Wm. ... ..	1726	Stockholm.	1796	London.	Somerset House.
Rennie, J. ... ..	1761	E. Lothian.	1821	Blackfriars.	London and Waterloo Bridges.
Pugin, A. W. ... ..	1812	London.	1852	Ramsgate.	Pioneer of the revival of Gothic architecture.
Barry, Chas. ... ..	1795	Westminster.	1860	London.	Houses of Parliament, Traveller's and Reform Clubs, College of Surgeons.
Paxton, Jos. ... ..	1803	near Woburn.	1865	Sydenham.	Crystal Palace.
Stevens, A. G. ... ..	1817	Blandford (Dorset).	1875	London.	Wellington Monument in St. Paul's Cathedral.
Fowke, Fr. ... ..	1823	Belfast.	1865	London.	Albert Hall, 1862.
Scott, Gilbert ... ..	1811	near Buckingham.	1878	South Kensington.	Revival of Gothic architecture; Martyrs' Memorial, Oxford; St. Giles', Camberwell; Hamburg Cathedral; Albert Memorial.
Street, G. E. ... ..	1824	Woodford (Essex).	1881	London.	Royal Courts of Justice.

## PAINTING.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Polygnotus ... ..	A.D. ...	Thasos.	A.D. ...	...	First portrait and historic painter. Wall paintings of the Fall of Troy, &c., at Delphi, 460 B.C.
Zeuxis ... ..	...	Heraclea.	...	...	"Zeus in the Assembly of the Gods." He excelled in colouring, 400.
Apelles ... ..	...	near Ephesus.	...	Cos.	"Venus," "The Graces," portrait of Alexander, 340—323.
Pictor, C. F. ... ..	...	...	...	...	First Roman painter, 291.
Apollodorus ... ..	...	...	...	...	First movable pictures, 150.
Cimabue ... ..	1240	Florence.	1302	...	Revival of painting.
Giotto ... ..	1276	near Florence.	1336	Florence.	Numerous works of bolder handling and brighter colour.
Eyck, Jan van ... ..	1390	Maaseyck.	1440	Bruges.	Founder of Flemish School.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Angelico, Fra ... ..	A.D. 1387	near Fiesole.	A.D. 1455	Rome.	Minimum of shadow. Frescoes of Dominican Convent, Florence, and in chapel of Nicholas V., Rome.
Fouquet, Jehan ... ..	about 1415	Tours.	1483	...	Illuminated "Livre d'Heures."
Mantegna ... ..	1431	Padua.	1506	Mantua.	Chief of the Paduan School.
Bellini, G. ... ..	1426	Venice.	1516	Venice.	Founder of the Venetian School.
Vinci, L. da ... ..	1452	Val d'Arno.	1519	Amboise.	Chief of the Florentine School. "Last Supper," "Trattato della Pittura," Treatise on Painting.
Raphael ... ..	1483	Urbino.	1520	Rome.	In his first, or Peruginesque manner, "Spasazio"; second, or Florentine manner, "St. Catherine of Alexandria," "Entombment of Christ"; third, or Roman manner, frescoes, cartoons, Madonnas, "The Transfiguration."
Perugino ... ..	1446	Citta della Pieve.	1524	Perugia.	Chief of the Umbrian School. Tutor of Raphael.
Dürer, Albrecht... ..	1471	Nurem- berg.	1528	Nurem- berg.	Four Apostles, Munich; etchings, copper and wood engravings.
Luini, Bernard ... ..	1460	Luina (Lago Mag- giore).	1530	...	Best Milanese.
Matsys, Quintin... ..	1466	Louvain.	1531	Antwerp.	Connecting link of Van Eyck's School and Rubens'.
Francia ... ..	1450	Bologna.	1533	...	Chief of Bolognese School of painters.
Correggio ... ..	1494	Reggio (near Modena).	1534	Reggio.	"Loveliest colour" (Ruskin).
Holbein ... ..	1497	near Darmstadt.	1543	London.	"Dance of Death," portraits of the reign of Henry VIII.
Mabuse, Jan Gossaert ... ..	1499	Maubeuge.	1562	Antwerp.	Portraits of the reign of Henry VIII.
Angelo, M. ... ..	1475	Caprese (Tuscany).	1564	Rome.	Frescoes of the Sistine Chapel, "Last Judgment."
Titian ... ..	1480	Friuli.	1576	near Venice.	Greatest of the Venetian School (600 works).
Veronese, Paul ... ..	1528	Verona.	1588	Venice.	Silvery tone, rich and varied composition.
Tintoretto ... ..	1512	Venice.	1594	Venice.	Venetian frescoes of immense size.
Zuccherro, F. ... ..	1543	near Urbino.	1609	Ancona.	Portraits of Queen Elizabeth, Mary Queen of Scots; frescoes of Duomo, Florence.
Rubens ... ..	1577	Siegen (Nassau).	1640	Antwerp.	His invention, creative power, and un- wieldy industry are shown in a thou- sand pictures, many of them colossal.
Vandyke ... ..	1599	Antwerp.	1641	London.	Best Flemish portrait painter of the 17th century.
Guido Reni ... ..	1574	near Bologna.	1642	Bologna.	Grace of form.
Potter, Paul ... ..	1625	Enkhuy- sen.	1654	Amster- dam.	Animal painter.
Velasquez ... ..	1599	Seville.	1660	Madrid.	Best Spanish portrait painter of the 17th century. "Most facile" (Ruskin).
Hals, F. ... ..	1584	Mechlin.	1666	Haarlem.	Best Dutch portrait painter of the 17th century.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Wouvermans, P. ...	A. D. 1620	Haarlem.	A. D. 1668	Haarlem.	Horse and battle painter (white horse), 800 pieces.
Rembrandt ...	1606	Leyden.	1669	Amsterdam.	Maximum of shadow.
Ruysdael, J. ...	1636	Haarlem.	1681	Haarlem.	Waterfalls, &c.
Claude de Lorraine ...	1600	Lorraine.	1682	Rome.	Clear, spacious, sunlit landscapes. "Liber Veritatis," 6 volumes (two republished).
Murillo ...	1618	Seville.	1685	Seville.	Chief of the Spanish School.
Yriarte ...	1620	Guipuscoa.	1685	Seville.	Best Spanish landscapes.
Teniers ...	1610	Antwerp.	about 1690	Brussels.	Best genre painter of Flemish School.
Cuyp, A. ...	1606	Dort.	1691	Dort.	Meadow landscapes. Atmospheric effects.
Hobbema ...	1638	Antwerp.	1709	Amsterdam.	Excels in foliage.
Watteau ...	1684	Valenciennes.	1721	near Paris.	Fêtes champêtres.
Hogarth, Wm. ...	1697	London.	1764	London.	Realist, time of George II.
Gainsborough ...	1727	Sudbury (Suffolk).	1788	London.	Best English landscape and portrait painter of the 18th century.
Reynolds, Joshua ...	1723	Plympton (Devon).	1792	London.	Best English portrait painter of the 18th century.
Romney, Geo. ...	1734	Dalton-in-Furness.	1802	Kendal.	Portraits of the reign of George III.
Girtin, Th. ...	1773	London.	1802	London.	Founder of water-colour painting.
David, J. L. ...	1748	Paris.	1825	Brussels.	Founder of the modern French School. Classic and Napoleonic subjects.
Wilkie, D. ...	1785	Cults (Fifeshire).	1841	off Gibraltar.	Scenes of common life and historic pieces.
Turner, J. M. W. ...	1775	London.	1851	Chelsea.	Greatest English landscape painter. "Liber Studiorum." Marine; haze, mist, vapours, rain, &c.
Prout, Sam. ...	1783	Plymouth.	1852	Cambridge.	Mediæval buildings of France, Flanders, Germany, and Italy.
Delaroche, Paul ...	1797	Paris.	1856	Paris.	Historical subjects.
Scheffer, Ary ...	1795	Dort.	1858	Argenteuil.	Subjects from Greek Insurrection, Dante, Goethe, and religious pictures.
Decamps, G. A. ...	1803	Paris.	1860	Fontainebleau.	Vigorous colourist of Oriental scenes.
Delacroix, Eugène ...	about 1798	Charenton.	1863	Paris.	"Dante and Virgil," Massacre of Scio," "Entry of Crusaders into Constantinople."
Roberts, D. ...	1796	Edinburgh.	1864	London.	Cathedrals, &c.
Ingres, J. A. D. ...	about 1780	Montauban.	1867	Paris.	Classical and historic.
Cornelius ...	1787	Düsseldorf.	1867	Berlin.	Glyptothek, Munich.
Maclise, D. ...	1811	Cork.	1870	London.	"Meeting of Wellington and Blücher," "Death of Nelson," Westminster.
Schnorr, Julius ...	1794	Leipsic.	1872	Dresden.	Nibelungen frescoes, Munich.
Landseer, Edwin ...	1802	London.	1873	London.	Human sympathies of animals.
Kaulbach ...	1805	Arolsen.	1874	Munich.	Mural paintings in Berlin Museum.
Millet, J. D. ...	1815	Gréville.	1875	Barbison.	Pleasant representations of humble life. "Angelus."
Gallait, L. ...	1810	Tournay.	1887	...	Belgian historical painter.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Meissonier ... ..	A. D. 1815	Lyons.	A. D. 1891	Paris.	Pictures often of very small size, remarkable for clearness and delicacy of tone. Victorian realist. "Derby Day." Animals. "The Horse Fair." "Light of the World," "Holy Innocents." First manner, "Augustine," "Pizarro"; second manner, Pre-Raphaelite, "Isabella," "Christ in the House of His Parents"; third manner, best portraits of the 19th century, children, conversation pieces, landscapes.
Frith, Wm. P. ... ..	1819	Aldfield.	...	...	
Bonheur, Rosa ... ..	1822	Bordeaux.	...	...	
Hunt, Holman ... ..	1827	London.	...	...	
Millais, J. E. ... ..	1829	Southampton.	...	...	

## SCULPTURE AND PLASTIC ART.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Dibutades ... ..	B. C. ...	...	B. C. ...	...	Modelling in clay, 700 B. C. "Zeus," "Pallas." "Doryphorus," "Diadumenus," "Amazon," "Hera." "Discobolus" ? "Niobe," &c., 360 } Mausoleum. 350 } 330 }
Phidias ... ..	488	Athens.	432	...	
Polyclethus ... ..	450	Sicyon.	410	...	
Myron ... ..	480	Eleutheris.	...	...	
Scopas ... ..	...	Paros.	...	...	
Leochares ... ..	...	...	...	...	"Alexander the Great," portrait statue, 330. Plaster moulds (Pliny), 330. "Lizard Slayer," "Venus of Cnidus," "Eros," "Satyr," "Hermes." Colossus of Rhodes, an Apollo 126 feet high (not straddling as popularly believed), 290.
Bryaxis ... ..	...	Athens.	...	...	
Lysippus ... ..	...	Sicyon.	...	...	
Lysistratus ... ..	...	...	...	...	
Praxiteles ... ..	384	Athens.	314	...	
Chares ... ..	...	Rhodes.	...	...	Trajan's Column, 114 A. D. Revived the art in Italy. Pulpit of Baptistery, Pisa, and of Cathedral, Siena. } Henry III. and Queen Eleanor, Eleanor } Crosses, about 1280. Gates of Baptistery, Florence.
Apollodorus ... ..	A. D. ...	Damascus.	A. D. 130	...	
Pisano, Niccola ... ..	about 1206	Pisa.	about 1278	Pisa.	
Torel, Wm. ... ..	...	...	...	...	
William of Ireland ... ..	...	...	...	...	
Ghiberti ... ..	about 1380	Florence.	about 1455	Florence.	Greatest and earliest Florentine sculptor.
Donatello ... ..	1383	Florence.	1466	Florence.	



	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Luca della Robbia ...	A. D. 1400?	Florence.	A. D. 1482	...	"Della Robbia ware."
Verrocchio ...	1432	Florence.	1488	Venice.	"Colleoni," Venice.
Torregiano ...	1472	Florence.	1522	Seville.	Henry VII.'s monument, Westminster Abbey.
Vischer, P. ...	1460	Nuremberg.	1529	Nuremberg.	Brass founder. Shrine of St. Sebald, Nuremberg.
Angelo, Michael ...	1475	Caprese (Tuscany).	1564	Rome.	"Moses," "David," "Day" and "Night," "Morning" and "Evening."
Cellini ...	1500	Florence.	about 1571	Florence.	Worker in precious metals.
Palissy ...	about 1510	near Agen.	1589	Bastille.	White enamel for stoneware, "Palissy ware," natural objects in colour, and high relief.
Pilon ...	1535	Le Mans.	about 1590	Paris.	"The Three Graces" (Louvre).
John of Bologna ...	about 1530	Douai.	1608	Florence.	"Mercury" (Florence).
Stone, N. ...	1586	Woodbury (near Exeter).	1647	...	"Spenser," and others (Westminster).
Soeur, Le ...	...	...	...	...	Charles I. (bronze equestrian), London, 1639.
Bernini ...	1589	Naples.	1680	Rome.	"Apollo," and "Daphne."
Verbruggen, Pieter ...	...	Antwerp.	1686	...	Belgian wood carved pulpits.
Puget ...	1622	Marseilles.	1694	Marseilles.	"Milo of Crotona."
Cibber ...	1630	Flensburg.	1700	...	Earliest English realist. "Melancholy" and "Madness."
Gibbons, Grinling ...	1648	Rotterdam.	1721	London.	Wood carving.
Verbruggen, H. F. ...	1655	Antwerp.	1724	...	Belgian pulpits—carved in wood.
Roubiliac ...	1695	Lyons.	1762	London.	"Shakespeare" (British Museum), "Handel" (Westminster Abbey), "Newton" (Canterbury).
Wedgwood, Josiah ...	1730	Burslem.	1795	Etruria (Stafford).	Pottery, Classical Revival.
Canova, Antonio ...	1757	near Asolo.	1822	Venice.	"Psyche."
Flaxman ...	1755	York.	1826	London.	"Shield of Achilles."
Chantry ...	1781	near Sheffield.	1841	London.	"The Sleeping Children," Lichfield Cathedral.
Dannecker ...	1758	near Stuttgart.	1841	Rome.	"Christ."
Thorwaldsen ...	1770	...	1844	Copenhagen.	"Christ and the Apostles," Fruekirche, Copenhagen; Lion of Lucerne, "Day and Night," "The Seasons."
Schwanthaler ...	1802	Munich.	1848	...	Colossal "Bavaria," and Glyptothek, Munich.
David (d'Angers) ...	1789	Angers.	1856	Paris.	Pediment of the Pantheon, Paris; countless busts and monuments.
Rauch, C. ...	1777	Arolsen.	1857	Berlin.	Monuments to Frederick the Great at Berlin, Blücher at Breslau, and to Albert Dürer at Nuremberg.
Foley, J. H. ...	1818	Dublin.	1874	London.	"Asia" and "Prince Consort" for Albert Memorial.

## MUSIC.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Aristotle ... ..	B.C. 384	Stagira.	B.C. 322	Chalcis (Eubœa).	Greek music.
Euclid ... ..	...	Alexandria.	...	...	Treatise of Music, 300 B.C.
Ctesibius ... ..	...	...	...	...	Hydraulic organ, 282.
Ptolemy, C. ... ..	A.D. 70	Pelusium.	A.D. ...	...	Inventor of modern scales.
Ambrose, St. ... ..	340	Trèves.	397	Milan.	Church music.
Gregory the Great ... ..	544	Rome.	604	...	"Antiphonarium."
Guido d'Arezzo ... ..	about 995	Arezzo.	...	...	Syllabic notation.
Farrant, R. ... ..	about 1530	...	1580	Windsor.	} Early English church music.
Tallis, Th. ... ..	1529	...	1585	...	
Palestrina ... ..	1524?	Palestrina.	1594	Rome.	Present style of church music. First Hymnal.
Gibbons, O. ... ..	1583	Cambridge.	1628	Canterbury.	The English Palestrina. Copper plates of music.
Monteverde, C. ... ..	about 1570	Cremona.	about 1650	...	Modern system of harmony.
Amati, Nicolo ... ..	1596	Cremona?	about 1684	...	Violins of clear and powerful tone.
Purcell, H. ... ..	1658	Westminster?	1695	Westminster.	Operas, songs, and church music.
Stradivari, A. ... ..	1649	Cremona.	1737	...	Violins.
Bach, Sebastian... ..	1685	Eisenach.	1750	Leipzig.	Equal temperament, twelve keys. "Passionsmusik."
Handel, G. F. ... ..	1685	Halle.	1759	London.	"Messiah," "Israel in Egypt," "Judas Maccabæus."
Gluck, C... ..	1714	Bavaria.	1787	Vienna.	"Iphigénie," "Alceste," "Armida."
Mozart, W. A. ... ..	1756	Salzburg.	1791	Vienna.	The Raphael of Music. "Le Nozze di Figaro," "Don Giovanni," "Die Zauberflöte," "Twelfth Mass," "Requiem."
Haydn, Jos. ... ..	1732	near Vienna.	1809	Vienna.	"Creation."
Dibdin, C. ... ..	1745	Southampton.	1814	London.	Sea-songs.
Weber, C. M. ... ..	1786	Holstein.	1826	London.	"Der Freischütz," "Oberon."
Beethoven, L. ... ..	1770	Bonn.	1827	Vienna.	"Fidelio," "Mount of Olives," sonatas.
Schubert, F. ... ..	1797	Vienna.	1828	Vienna.	457 songs, and an immense variety of music.
Bellini, V. ... ..	1802	Catania.	1835	near Paris.	"Norma," "La Sonnambula," "I Puritani."
Mendelssohn, F. ... ..	1809	Berlin.	1847	Leipzig.	"Elijah," "St. Paul," Lieder.
Donizetti, G. ... ..	1798?	Bergamo.	1848	Bergamo.	"Lucrezia Borgia," "Lucia di Lammermoor," "La Figlia di Regimento."
Chopin, Fr. ... ..	1809	near Warsaw.	1849	Paris.	Founder of the modern Pianoforte school. Funeral March.
Bishop, H. ... ..	1786	London.	1855	London.	Songs, glees, &c.; "Home, sweet Home."

	BIRTH.		DEATH.		
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Schumann, R. ...	A. D. 1810	Zwickau.	A. D. 1856	near Bonn.	Pianoforte and orchestral music, songs of Heine, Rückert, and Burns.
Spohr, L... ..	1783	Brunswick.	1859	Cassel.	"Letzten Dinge" (Last Judgment).
Meyerbeer, J. ...	1791	Berlin.	1864	Paris.	"Huguenots," "Dinorah," "Robert le Diable."
Wallace, W. V. ...	about 1815	Waterford.	1865	Haute Garonne.	"Maritana," "Lurline."
Rossini, G. ... ..	1792	Pesaro.	1868	near Paris.	"William Tell," "Italiana in Algieri," "Il Barbiere di Seviglia," "Stabat Mater."
Balfe, M. W. ... ..	1808	Dublin.	1870	near Hertford.	"Bohemian Girl."
Auber, F. D. ... ..	1782	Caen.	1871	Paris.	"Masaniello," "Les Diamants de la Couronne," "Fra Diavolo."
Dykes, J. B. ... ..	1823	Hull.	1876	Durham.	53 tunes in "Hymns Ancient and Modern."
Flotow, Fr. v. ...	1812	Mecklen- burg.	1883	...	"Martha."
Monk, W. H. ... ..	1823	London.	1889	...	"Hymns Ancient and Modern," 49 original tunes.
Wagner, R. ... ..	1813	Baireuth.	...	...	"Tannhäuser," "Lohengrin."
Verdi, Giuseppe ...	1814	Roncola (Parma).	...	...	"Il Trovatore," "La Traviata."
Gounod, Chas. ...	1818	Paris.	...	...	"Faust," "Redemption." "Messe Solennelle."
Grove, George ...	1820	Clapham.	...	...	Dictionary of Music.

## II.—LITERATURE.

## BIOGRAPHERS.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Nepos, Cornelius	A.D. ...	...	A.D. ...	...	"Lives of (25) Skilful Commanders," 95 B.C.
Rufus, Q. Curtius	...	...	...	...	Life of Alexander the Great, 100 A.D.
Plutarch	50	Chæronea.	120	...	Father of Biography. "Lives," (46) Greeks and Romans compared.
Suetonius, C. T.	...	...	about 120	...	"Lives of Twelve Cæsars."
Diogenes, Laërtius	...	Cilicia.	...	...	"Lives of the Philosophers," 205.
Iamblichus	...	Cœle-Syria	333	...	Pythagoras.
Eusebius	about 270	Cæsarea.	340	...	Constantine.
Abulfeda, I.	1275	Damascus.	1331	Hamah.	Mahomet and Saladin.
More, Thos.	1478	London.	1535	London.	Edward V. and Richard III.
Bacon, Nicholas	1510	Chislehurst.	1579	London.	Henry VII.
Buchanan, D.	...	...	1652	...	John Knox.
Gassendi, P.	1592	near Digne.	1655	Paris.	Tycho Brahe and Copernicus.
Fuller, Thos.	1608	Thrapston.	1661?	London.	"Worthies of England;" "Abel Redivivus."
Walton, Izaak	1593	Stafford.	1683	Winchester.	Hooker and Geo. Herbert, &c.
Wood, Anthony	1632	Oxford.	1695	Oxford.	Oxford men from 1500 ("Athenæ Oxonienses").
Styrye, J.	1643	Stepney.	1737	Hackney.	Lives of Archbishops Cranmer, Parker, Grindal, and Whitgift.
Johnson, Sam.	1709	Lichfield.	1784	London.	"Lives of the Poets."
Boswell, J.	1740	Edinburgh.	1795	London.	Johnson.
Hazlitt, Wm.	1778	Maidstone.	1830	London.	Napoleon. Contemporary Portraits.
Mackintosh, J.	1765	near Inverness.	1832	London.	Sir Th. More.
Cunningham, A.	about 1785	near Dumfries.	1842	...	Lives of the British Painters.
Southey, R.	1774	Bristol.	1843	Keswick.	Nelson, Wesley, Cowper.
Thiele	...	...	...	...	Thorwaldsen, 1833.
Moore, T.	1779	Dublin.	1852	near Devizes.	Byron, Sheridan.
Lockhart, J. G.	1793	Glasgow.	1854	Abbotsford.	Walter Scott.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Irving, W. ... ..	A. D. 1783	New York.	A. D. 1859	near Tarrytown (New York).	Washington.
Campbell, John ... ..	about 1780	Cupar.	1861	Kensing- ton.	Chancellors of Great Britain.
Brewster, D. ... ..	1781	Jedburgh.	1868	near Melrose.	Isaac Newton.
Wilberforce, Sam. ... ..	1805	Clapham.	1873	near Abinger.	W. Wilberforce.
Russell, John ... ..	1792	London.	1878	Richmond.	T. Moore.
Smiles, S. ... ..	1816	Hadding- ton.	...	...	"Lives of the Engineers."
Froude, J. A. ... ..	1818	near Totnes.	...	...	Carlyle.
Masson, D. ... ..	1822	Aberdeen.	...	...	Milton.
Pole, W.... ... ..	1814	Birming- ham.	...	...	C. Wm. Siemens, 1888.

## ESSAYISTS, CRITICS, &amp;c.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Lucian ... ..	A. D. about 125	Samosata.	A. D. 200	...	"Dialogues."
Longinus ... ..	...	...	273	...	"Treatise on the Sublime."
Scaliger, J. C. ... ..	1484	Venetia.	1558	Agen.	Commentator and critic.
Montaigne ... ..	1533	Montaigne (Perigord).	1592	Montaigne.	The modern Essay.
Bacon, F. ... ..	1561	London.	1626	Highgate.	"Essays."
Burton, Robt. ... ..	1576	Leicester- shire.	1640	Oxford.	"Anatomy of Melancholy."
Selden, John ... ..	1584	near Worthing.	1654	London.	"Table Talk."
Balzac, J. L. de... ..	1594	Angoul- ême.	1655	Balzac (Charente)	"Familiar Letters."
Pascal, B. ... ..	1623	Clermont (Auvergne).	1662	...	"Lettres provinciales."
Larochefoucauld ... ..	1613	...	1680	Paris.	"Maximes et Reflexions morales."
Browne, T. ... ..	1605	London.	1682	Norwich.	"Religio Medici."
Walton, I. ... ..	1593	Stafford.	1683	Winches- ter.	"The Complete Angler."
Séguier, M. de ... ..	1626	Paris.	1696	Grignan.	"Lettres à sa Fille."
St. Evremond ... ..	1613	Normandy.	1703	London.	Essays and Discourses on various subjects.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Locke, J. ....	A.D. 1632	Wroughton (Somerset).	A.D. 1704	Essex	"Essay concerning Human Understanding."
Addison, Jos. ....	1672	Milston (Wilts).	1719	London.	<i>Tatler</i> ; <i>Spectator</i> .
Montesquieu ...	1689	Gironde.	1755	Paris.	"L'Esprit des Lois."
Johnson, Sam. ...	1709	Lichfield.	1784	London.	<i>Rambler</i> , and <i>Idler</i> .
White, Gilbert ...	1720	Selborne.	1793	Selborne.	"Natural History of Selborne."
Walpole, Horace ...	1717	London.	1797	London.	Letters, 1735—1797.
Francis, Ph. ...	1740	Dublin.	1818	London.	"Junius' Letters."
Coleridge ...	1772	Ottery St. Mary.	1834	Highgate.	"Table Talk;" "Aids to Reflection."
Lamb, Chas. ...	1775	London.	1834	Edmonton.	"Essays of Elia;" "Tales from Shakespeare."
Smith, Sydney ...	1768	Woodford.	1845	London.	"Letters of Peter Plymley."
D'Israeli, Isaac ...	1766	Enfield.	1848	Bradenham (Bucks).	"Curiosities of Literature;" "Quarrels and Calamities of Authors;" "Amenities of Literature."
Jeffrey, F. ...	1773	Edinburgh.	1850	Edinburgh.	<i>Edinburgh Review</i> .
Wilson, John ...	1785	Paisley.	1854	Edinburgh.	"Christopher North" of <i>Blackwood's Magazine</i> .
Macaulay ...	1800	near Leicester.	1859	Kensington.	"Critical and Historical Essays."
Carlyle, Thos. ...	1795	Ecclefechan.	1881	Chelsea.	"Sartor Resartus;" "Heroes and Hero-worship," &c.
Brown, J. ...	1810	Biggar.	1882	Edinburgh.	"Horæ Subsecivæ."
Emerson, R. W. ...	1803	Boston.	1882	Concord.	"Essays;" "Representative Men."
Newman, J. H. ...	1801	London.	1890	Birmingham.	"Tracts for the Times;" Essays; "Apologia."
Ruskin, J. ...	1819	London.	...	...	"Modern Painters;" "Seven Lamps of Architecture;" "Stones of Venice;" and a star-shower of minor works.
Lowell, J. R. ...	1819	Cambridge (Mass.).	...	...	"The Biglow Papers."

## HISTORIANS AND ARCHÆOLOGISTS.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Herodotus ...	B.C. 484	Halicarnassus (Caria).	B.C. 408	...	"Father of History." All Greece, Thrace, coasts of Euxine, Egypt, Babylon, Ec-batan, and Susa.
Thucydides ...	about 471	Athens.	about 402	Athens?	After an introductory sketch of early Greece, he tells the story of the first twenty years (431—411 B.C.) of the twenty-seven-year Peloponnesian war.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Xenophon ... ..	B.C. about 444	Athens.	B.C. 357	Corinth.	"Anabasis and Hellenica," 411—362 B.C., Greece.
Manetho ... ..	...	...	...	...	First History of Egypt, 280.
Berosus ... ..	...	Babylon?	...	...	First History of Chaldaea, 260.
Polybius ... ..	204	Megalopolis (Arcadia)	122	...	Greece and Rome, 220—157 B.C., forty books, five only extant complete.
Cæsar, Julius ... ..	100	Rome.	44	Rome.	Commentaries.
Sallust ... ..	86	Amiturnum	35 A.D.	Tivoli.	"Catiline's Conspiracy," "Jugurthine War."
Livy, Titus ... ..	59	Padua.	17	Padua.	History of Rome to 10 B.C. (of one hundred and forty-two books, thirty-five remain).
Josephus, Fl. ... ..	A.D. 37	Jerusalem.	about 90	Rome.	Jewish war and destruction of Jerusalem.
Tacitus ... ..	55	Terni.	117	...	"Annals" (Rome, 14—68 A.D.), books of History (68—71 A.D.), Germania and Agricola.
Arrianus ... ..	about 100	Nicomedia (Bithynia).	after 150	Bithynia.	Campaigns of Alexander the Great.
Pausanias ... ..	...	Asia Minor.	...	...	"Itinerary of Greece," about 150 A.D.
Eusebius ... ..	about 270	Cæsarea.	340	near Cæsarea.	Ecclesiastical History till 324.
Procopius ... ..	...	Cæsarea.	about 560	Constantinople.	Wars of the Byzantines against the Vandals, Moors, Persians, and Goths (395—559).
Bede ... ..	about 673	Yarrow-on-Tyne.	735	Yarrow.	Ecclesiastical History.
Anna Comnena ... ..	1083	...	1148	...	"Alexiad" (Byzantium, 1081—1118).
Aagesen, Svend ... ..	...	...	...	...	Earliest Danish historian, 1187.
Saxo Grammaticus ... ..	...	...	1204	Roeskilde.	"Kings and Heroes of Denmark."
Giraldus Cambrensis ... ..	1147	Manorbeer, (near Tenby).	about 1220	St. Davids.	History of the Conquest of Ireland.
Snorri-Sturleson ... ..	1178	Hvamm.	1241	Reikiaholt.	"Heimskringla," Icelandic legends in verse.
Paris, Matthew ... ..	...	St. Albans.	1259	...	History of England (1066—1259).
Abulfeda ... ..	1275	Damascus.	1331	Hamah.	"Historia Major."
Froissart, J. ... ..	1337	Valenciennes.	1401	Chimay.	"Chronicles" from 1322—1400.
Comines, P. de ... ..	1445	near Courtrai.	1509	Argenton.	"Memoirs."
Guicciardini ... ..	1482	Florence.	1540	Florence.	"Istoria d' Italia."
Barros, J. de ... ..	1496	Viseu (Beira).	1570	Portugal.	Portuguese Asia.
Mendoza, D. H. ... ..	1503	Granada.	1575	Valladolid.	"Guerra de Granada contra los Moriscos" is a Spanish classic.
Holinshed, R. ... ..	...	Cheshire.	1580	...	"Chronicles of England,"
Foxe ... ..	1517	Boston.	1587	...	"Acts and Monuments."
Stow ... ..	1525	London.	1605	...	"Chronicles of England."
Scaliger, J. J. ... ..	1540	Agen.	1609	Leyden.	Founder of Chronological Science.
Thou, J. A. de ... ..	1553	Paris.	1617	Paris.	History of his own time.
Vega, Garcilasso de la ... ..	1540	Cuzco.	1620	Cordova.	History of Peru and Florida.
Mariana ... ..	1536	Talavera.	1623	Madrid.	Spain, "Historia de Rebus Hispaniæ."
Camden ... ..	1551	London.	1623	Chislehurst.	"Britannia."
Herrera, A. de T. ... ..	1549	Cuellar.	1625	Madrid.	History of Spanish Conquests, 1492—1552.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
D'Aubigné ... ..	A.D. 1550	near Rochefort.	A.D. 1630	Geneva.	History of his own time.
Faria y Sousa ... ..	1590	Portugal.	1649	Madrid.	History of Portugal and Colonies.
Clarendon ... ..	1608	Dinton (Wilts).	1674	Rouen.	Rebellion and civil wars in England and Ireland.
Dugdale ... ..	1605	Shustoke (Warwick).	1686	near Coleshill.	"Monasticon."
Solis, A. de ... ..	1610	near Madrid.	1686	Madrid.	History of Mexico.
Ferishta ... ..	...	Persia.	...	...	History of India under Mussulmans, 1690.
Pepys, S. ... ..	1632	Brampton (Hunts).	1703	...	"Diary."
Evelyn ... ..	1620	Wotton (Surrey).	1706	Wotton.	"Diary" (1641—1706).
Kämpfer, E. ... ..	1651	Lemgo.	1716	Lemgo.	History of Japan and Siam.
Strype ... ..	1643	Stepney.	...	Hackney.	"Ecclesiastical Monuments," and "Annals of the Reformation."
Rollin ... ..	1661	Paris.	1741	...	"Ancient History," "Roman History."
Montfaucon, B. de ...	1655	Soulage (Languedoc).	1741	Paris.	"Palæographia Græca," "L'Antiquité," &c.
Fourmont, Etienne ...	1683	Herbelay.	1745	Paris.	First made known in Europe the Chinese characters.
Muratori ... ..	1672	near Modena.	1750	Modena.	Roman History and Antiquities.
Hume ... ..	1711	Edinburgh.	1776	Edinburgh.	History of England (55 B.C.—1688 A.D.).
Voltaire ... ..	1694	Paris.	1778	Paris.	"History of Charles XII."
Robertson, Wm. ... ..	1721	Midlothian.	1793	near Edinburgh.	"History of Scotland" (Queen Mary and James VI.)—of "America"—of "Reign of Charles V."
Gibbon, Edward ... ..	1737	Putney.	1794	London.	"Decline and Fall of Roman Empire."
Jones, W. ... ..	1746	London.	1794	Calcutta.	Asiatic Literature, "Ordinances of Menu."
Raynal ... ..	about 1713	Aveyron.	1796	Passy.	History of Indies (East and West).
Joseph de Guignes ...	1721	Pontoise.	1800	Paris.	History of the Huns, Turks, and Moguls.
Schiller, Fr. ... ..	1759	Marpach.	1805	Weimar.	"History of the Thirty-Years War," "Revolt of the Netherlands from Philip II."
Beckmann, J. A. ... ..	1739	near Bremen.	1811	Göttingen.	"History of Discoveries and Inventions."
Karamsin, N. ... ..	1765	Simbirsk.	1826	St. Petersburg.	Russian Empire to 1611.
Young, T. ... ..	1773	Milverton (Somerset).	1829	London.	Rosetta Stone (key to hieroglyphics).
Ségur, P. P. ... ..	1780	...	1830	...	Napoleon's Russian Campaign.
Niebuhr ... ..	1776	Copenhagen.	1831	Bonn.	Roman History (with modern criticism).
Champollion, J. F. ...	1790	Figeac.	1832	Paris.	"Egypt under the Pharaohs."
Mackintosh, J. ... ..	1765	near Inverness.	1832	London.	Revolution, 1688.
Mill, J. ... ..	1773	near Forfar.	1836	Kensington.	History of British India.
Arnold, Thomas ... ..	1795	Cowes.	1842	Ambleside.	Rome, alternately in glowing legend and dry fact.



	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Southey, R. ...	A.D. 1774	Bristol.	A.D. 1843	...	"History of the Peninsular War," "History of Brazil."
Zschokke, J. H. D. ...	1771	Magdeburg.	1848	Aargau.	"History of Switzerland."
Neander, J. A. W. ...	1789	Göttingen.	1850	Berlin.	History of the Christian Religion and Church.
Lingard ...	1771	Winchester.	1851	Hornby.	England, from the Roman Catholic point of view.
Grotefend, G. F. ...	1775	Münden.	1853	...	Deciphered Persepolitan and Babylonian Cuneiform inscriptions.
Hallam, H. ...	1777	Windsor.	1859	Penshurst.	Constitutional History of England (Henry VII.—George II.).
Prescott, W. H....	1796	Salem (Mass.).	1859	Boston.	History of Mexico and Peru; History of Ferdinand and Isabella; Philip II.
Irving, Washington ...	1783	New York.	1859	near Tarrytown (N.Y.).	History of Conquest of Granada; History of Columbus.
Macaulay ...	1800	near Leicester.	1859	...	"History of England" (Accession of James II. to death of William III.).
Tocqueville, De... ..	1805	Vermeuil.	1859	...	History of French Revolution and American Republic.
Napier, W. ...	1785	Co. Kildare.	1860	Clapham.	History of Peninsular War.
Fellows, C. ...	1799	near Notting-ham.	1860	London.	Lycian Marbles; Valley of the Xanthus.
Buckle, H. T. ...	1822	Lee.	1862	Damascus.	History of Civilisation (1858—61).
Alison, A. ...	1792	Kenley (Shropshire).	1867	...	History of Europe (1789—1815).
Milman, H. ...	1791	London.	1868	...	Latin Christianity (to 1455).
Jomini ...	1779	Payerne (Vaud).	1869	Passy.	Military History of the Campaigns of the Revolution and of Napoleon (1792—1815).
Lamartine ...	1792	Macon.	1869	Paris.	"History of Girondins," and of France (1848—63).
Botta, P. F. ...	about 1805	...	1870	Poissy.	Excavated the ruins of Khorsabad.
Grote, G. ...	1794	Beckenham.	1871	London.	History of Greece.
De Rougé ...	1811	Paris.	1872	Sarthe.	Translated papyri; "Recherches sur les Monuments de six premières Dynasties."
Guizot ...	1787	Nîmes.	1874	Val Richer.	History of European Civilisation. Several books on Modern History of England and France.
Thirlwall, Connop ...	1797	Stepney.	1875	Bath.	History of Greece.
Wilkinson, Gardner ...	1797	Westmoreland.	1875	Llandovery.	Egypt.
Palacky, F. ...	1798	Moravia.	1876	Prague.	History of Bohemia.
Smith, G. ...	about 1825	...	1876	Aleppo.	Syllabic character of Cypriote inscriptions.
Motley, J. L. ...	1814	Dorchester (Mass.).	1877	near Dorchester (England).	"Rise of the Dutch Republic."

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Thiers ... ..	A. D. 1797	Marseilles.	A. D. 1877	St. Germain en Laye.	"History of the French Revolution;" "Consulat et l'Empire."
Mariette, A. E. ... ..	1821	Boulogne.	1881	Cairo.	"Le Serapeum de Memphis."
Carlyle, T. ... ..	1795	Ecclefe- chan.	1881	Chelsea.	"Cromwell;" "Frederick the Great;" "French Revolution."
Lepsius, K. R. ... ..	1811	Naum- berg.	1884	...	Etruria and Egypt.
Ranke, L. von ... ..	1795	Wiehe (Thurin- gia).	1886	...	Universal History; "History of the Popes" (16th and 17th centuries).
Wood, J. T. ... ..	1821	London.	1890	...	Ephesus; Temple of Diana (1868—74).
Bancroft, G. ... ..	1800	Worcester (Mass.).	1891	Washington.	American Revolution.
Rawlinson, H. ... ..	1810	Chadling- ton (Ox- ford).	...	...	Cuneiform inscriptions of Assyria, Babylon, &c.
Layard, A. H. ... ..	1817	Paris.	...	...	"Nineveh and its Remains;" "Monuments of Nineveh."
Schliemann, H. ... ..	1822	Nebukow (Mecklen- burg).	1890	Naples.	Excavations at Troy, Mycenæ, &c.
Du Chaillu, P. ... ..	1835	Paris.	...	...	"The Viking Age."
Lecky, W. ... ..	1838	Dublin.	...	...	History of England in the 18th century.
Newton, C. T. ... ..	1816	...	...	...	Budrum and Cnidus.

## LEXICOGRAPHERS.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Pa-out-she ... ..	B. C. ...	...	B. C. ...	...	Chinese Dictionary, 1100 B. C.
Varro, M. T. ... ..	116	Reate.	28	Rome.	"De Lingua Latina" (a Dictionary of the Latin language).
Quintilian, M. F. ... ..	A. D. 42	Calahorra (Spain).	A. D. about 122	...	"De Institutione Oratoriâ."
Ulfilas ... ..	318	...	388	Constanti- nople.	"Codex Argenteus" (the Gospels in Mæso-Gothic). The most ancient monu- ment of the Teutonic languages.
Priscian ... ..	525	Cæsarea.	...	...	"De Arte Grammaticâ," hence the phrase used by Butler :— "And hold no sin so deeply red As that of 'breaking Priscian's head.'"

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Suidas ... ..	A.D. ...	...	A.D. ...	...	Greek lexicographer, about 1000.
Ducange, C. D....	1610	Amiens.	1688	Paris.	Glossary of the writers of Mediæval and later Latin and Greek.
Bayle, P. ... ..	1647	near Foix.	1706	...	"Dictionnaire historique et critique," 1696.
Chambers, Ephraim ...	1680	Kendal.	1740	Islington.	Cyclopædia, 1728.
Facciolati, J. ... ..	1682	near Padua.	1769	...	Latin Dictionary; every word with illustrations of each meaning from the classics.
Diderot, Denis ... ..	1713	Langres.	1784	Paris.	Encyclopédie, 1751—80.
Johnson, Sam. ... ..	1709	Lichfield.	1784	London.	English Dictionary, 1755.
Ure, A. ... ..	1778	Glasgow.	1857	London.	"Dictionary of Chemistry;" "Dictionary of Arts, Manufactures, and Mines."
M'Culloch, J. R. ...	1789	Whithorn.	1864	London.	Dictionary of Commerce.

## METAPHYSICIANS, &amp;c.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Socrates ... ..	B.C. 469	Attica.	B.C. 399	...	Method of Question and Answer.
Democritus ... ..	460	Abdera.	about 370	...	The laughing philosopher.
Antisthenes ... ..	422	Athens.	...	Athens.	Founder of the Cynic school.
Plato ... ..	429	Athens?	347	...	Academic (best Greek system).
Diogenes... ..	413	Sinope.	323	Corinth?	Cynic.
Aristotle ... ..	384	Stagira.	322	Chalcis (Eubœa).	"The Peripatetic"—"philosopher of the Lyceum."
Epicurus ... ..	342	Samos.	270.	Athens.	Founder of the Epicurean school.
Zeno ... ..	366	Cyprus.	264	...	Founder of the Stoic school—school of the (painted) porch.
Epictetus... ..	A.D. 50	Hierapolis (Phrygia).	A.D. about 120	...	Founder of the New Stoic school.
Bacon, F. (Verulam) ...	1561	London.	1626	Highgate.	"Novum Organum," 1620. Experiment and observation.
Descartes, René... ..	1596	near Tours.	1650	Stockholm.	French school. "Cogito, ergo sum."
Berkeley, G. ... ..	1684	Co. Kil-kenny.	1753	Oxford.	"The Principles of Human Knowledge." Idealist.

## NOVELISTS, &amp;c.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Æsop ... ..	B. C.	Phrygia.	B. C.	...	Earliest Greek fabulist.
Pilpay (or Bidpai) ..	...	...	...	...	Indian fables. First known in Europe about the 12th century.
Babrius ... ..	...	...	...	...	Rendered existing fables into Greek verse about 150 B. C. (?)
Phædrus ... ..	...	Thrace.	A. D.	...	Rendered Greek fables into Latin Iambics about 20 A. D.
More, Thos. ... ..	A. D. 1480	London.	1535	London.	"Eutopia."
Rabelais ... ..	1483	Chinon.	1553	Meudon.	"Gargantua and Pantagruel."
Sidney, P. ... ..	1554	Penshurst.	1586	Zutphen.	"Arcadia."
Cervantes ... ..	1547	Alcala de Henares.	1616	Madrid.	"Don Quixote."
Bunyan, J. ... ..	1628	Elstow.	1688	London.	"Pilgrim's Progress;" "Holy War."
La Fontaine, Jean de ...	1621	Château Thierry.	1695	...	Best modern version of ancient fables.
Defoe, Daniel ... ..	1663	London.	1731	London.	"Robinson Crusoe."
Swift, Jonathan ... ..	1667	Dublin.	1745	Dublin.	"Gulliver's Travels;" "Tale of a Tub."
Sage, Le ... ..	1668	Sarzeau.	1747	Boulogne.	"Gil Blas."
Fielding, H. ... ..	1707	near Glastonbury.	1754	Lisbon.	"Tom Jones;" "Amelia."
Richardson, S. ... ..	1689	Derbyshire.	1761	...	"Pamela;" "Clarissa Harlowe;" "Sir C. Grandison."
Sterne, L. ... ..	1713	Clonmel.	1768	London.	"Tristram Shandy;" "Sentimental Journey."
Smollett, Tobias ... ..	1721	Cardross.	1771	Leghorn.	"Peregrine Pickle;" "Humphrey Clinker."
Goldsmith, O. ... ..	1728	Pallas.	1774	London.	"Vicar of Wakefield."
Johnson, S. ... ..	1709	Lichfield.	1784	London.	"Rasselas."
Day, Thomas ... ..	1748	London.	1789	near Wargrave.	"Sandford and Merton." "The first in the infinite series of instructive and amusing works for the young."— <i>Times</i> .
St. Pierre, Bernardin ...	1737	Havre.	1814	Oise.	"Paul and Virginia."
Radcliffe, Anne ... ..	1764	London.	1823	London.	"Mysteries of Udolpho."
Goethe ... ..	1749	Frankfort-on-Main.	1832	Weimar.	"Werther;" "Wilhelm Meister."
Scott, W. ... ..	1771	Edinburgh.	1832	Abbotsford.	Creator of the historic novel. "Waverley;" "Guy Mannering;" "Ivanhoe;" "Antiquary;" "Heart of Midlothian;" "Pirate."
D'Israeli, Isaac ... ..	1766	Enfield.	1848	Bradensham.	"Curiosities of Literature;" "Quarrels" and "Calamities of Authors;" "Illustrations of Literary Character;" "Aménities of Literature."

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Gogol, N. ...	A.D. 1810?	...	A.D. 1849?	...	The Russian Dickens. Stories of Russian provincial life.
Cooper, Fenimore ...	1789	Delaware.	1851	Coopers-town (N.Y.).	"The Last of the Mohicans;" "Pathfinder."
Irving, Washington ...	1783	New York.	1859	near Tarrytown (N.Y.).	"Sketch Book;" "Bracebridge Hall;" "Tales and Legends" (Spain).
Grimm, W. ...	1786	Hainau.	1859	Berlin.	} "Haus-märchen" ("Family Legends"); } "Kinder-märchen" ("Fairy Tales");
Grimm, J. L. ...	1785	Hainau.	1863	Berlin.	
Thackeray, W. M. ...	1811	Calcutta.	1863	London.	"Vanity Fair;" "Esmond;" "The New-comers;" "The Virginians."
Hawthorne, N. ...	1804	Salem (Mass.).	1864	Plymouth (New Hants).	"Scarlet Letter;" "House with Seven Gables."
Dumas, A. ...	1803	Villers Coterets.	1870	near Dieppe.	"Les trois Mousquetaires;" "Monte Christo." With assistants he manufactured countless novels.
Dickens, Charles ...	1812	near Portsmouth.	1870	near Rochester.	He created a new kind of novel from the commonest materials. "Pickwick Papers;" "Oliver Twist," &c.
Ramsay, E. B. ...	1793	Aberdeen.	1872	Edinburgh.	"Reminiscences of Scottish Life and Character."
Lytton, Bulwer ...	1805	...	1873	Torquay.	"Last Days of Pompeii;" "Rienzi;" "Last of the Barons;" "The Caxtons."
Andersen, H. C. ...	1803	Odensee.	1875	Copenhagen.	"Kinder-märchen" ("Fairy Tales").
Sand, Georges ...	1804	Paris.	1876	near Bourges.	"Consuelo;" "Horace," &c.
Eliot, George ...	1819	Warwickshire.	1880	London.	"Adam Bede;" "The Mill on the Floss;" "Silas Marner."
D'Israeli, B. ...	1804	London.	1881	London.	In "Coningsby," "Sybil," and "Tancred" he developed the political novel.
Trollope, A. ...	1815	...	1882	London.	"The Warden;" "Barchester Towers;" "The Three Clerks."
Hugo, Victor ...	1802	Besançon.	1885	Paris.	"Notre Dame de Paris," and others.
Stowe, Harriet B. ...	1811	Litchfield (Conn.).	...	...	"Uncle Tom's Cabin."

## POETS.

## ENGLISH.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Chaucer, G. ...	A.D. 1328	London.	A.D. 1400	London.	"Canterbury Tales."
Spenser, Edmd....	1553	London.	1599?	London.	"Faerie Queene."
Shakespeare ...	1564	Stratford-on-Avon.	1616	Stratford-on-Avon.	Sonnets.
Herbert, G. ...	1593	Montgomery Castle.	about 1632	Bemerton.	"The Temple."
Quarles, F. ...	1592	Romford	1644	...	"Emblems;" "The School of the Heart."
Cowley, Abraham ...	1618	London.	1667	Chertsey.	"Hieroglyphics of the Life of Man."
Milton, J. ...	1608	London.	1674	London.	On his tombstone in Westminster Abbey is "Anglorum Pindarus Flaccus et Maro"! "Paradise Lost" and "Regained;" "Samson;" "Lycidas;" "Comus;" and minor poems.
Butler, Sam. ...	1612	Strensham.	1680	London.	"Hudibras."
Waller, E. ...	1605	Coleshill.	1687	Beaconsfield.	
Dryden, J. ...	1631	Aldwinkle.	1701		Introduced revived classical style. "Annus Mirabilis," 1666.
Parnell, T. ...	1679	Dublin.	1717	Chester.	"The Hermit."
Gay, J. ...	1688	Barnstaple.	1732	London.	"Rural Sports;" "Trivia;" Fables.
Pope, A....	1688	London.	1744	near London.	"Essay on Man;" Translation of the "Iliad."
Thomson, J. ...	1700	Ednan (Roxburghshire).	1748	Richmond.	"Seasons;" "Rule, Britannia."
Collins, W. ...	1720	Chichester.	1756	Chichester	"Ode to the Passions."
Ramsay, Allan ...	1686	Leadhills.	1758	Edinburgh.	"The Gentle Shepherd."
Young, Edwd. ...	1681	Upham.	1765	Welwyn.	"Night Thoughts."
Akenside, M. ...	1721	Newcastle-on-Tyne.	1770	London.	"Pleasures of Imagination."
Chatterton, T. ...	1752	Bristol.	1770	London.	"Miscellanies."
Gray, Thos. ...	1716	London.	1771	Cambridge.	"Elegy;" "The Bard;" "Eton College."
Goldsmith, O. ...	1728	Pallas.	1774	London.	"The Traveller;" "Deserted Village."
Macpherson, J. ...	1738	Kingussie.	1796	Inverness.	"Fingal," by Ossian (?) "Temora."
Burns, R. ...	1759	Ayr.	1796	Dumfries.	Best lyrical poet of Scotland. He wrote with equal mastery the dialect of the South-west, and English. He improved most old Scottish songs and ballads.
Cowper, Wm. ...	1731	Great Berkhampstead.	1800	East Dereham.	"The Task;" "John Gilpin;" and many minor poems.
White, H. K. ...	1785	Nottingham.	1806	Cambridge.	"Clifton Grove," &c.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Tannahill, Robt. ...	A.D. 1774	Paisley.	A.D. 1810	near Paisley.	"Jessie the Flower of Dunblane ;" "Gloomy Winter's now awa ;" "London's bonnie Woods and Braes."
Dibdin, Chas. ...	1745	Southampton.	1814	London.	"Sea Songs ;" in all he wrote 1,400 songs.
Keats, J....	1795	London.	1820-1	Rome.	"Endymion ;" "Lamia."
Shelley, P. B. ...	1792	near Horsham.	1822	Gulf of Spezzia.	"Elegy on Keats ;" "Cloud ;" "Skylark."
Wolfe, Charles ...	1791	Dublin.	1823	...	"Burial of Sir John Moore."
Byron, G. G. ...	1788	London.	1824	Misson-longhi.	"Childe Harold ;" "The Giaour ;" "The Corsair ;" "Lara ;" "The Siege of Corinth."
Crabbe, Geo. ...	1754	Ald-borough.	1832	Trow-bridge.	"The Village ;" "The Parish Register ;" "The Borough."
Scott, Walter ...	1771	Edinburgh.	1832	Abbotsford.	"Lay of the Last Minstrel ;" "Marmion ;" "Lady of the Lake."
Coleridge, S. T....	1772	Ottery St. Mary.	1834	Highgate.	"Ancient Mariner."
Hemans, Felicia ...	1794	Liverpool.	1835	near Dublin.	"National Lyrics ;" "Hymns of Life," &c.
Landon, L. E. ...	1802	London.	1838	Cape Coast Castle.	"The Improvisatrice ;" "The Troubadour," &c.
Southey, Robt. ...	1774	Bristol.	1843	Keswick.	"Thalaba ;" "The Curse of Kehama ;" "Roderick."
Tennant, Wm. ...	about 1785	Anstruther (Fife).	about 1843	...	"Anster Fair" (Anstruther).
Campbell, Thos. ...	1777	Glasgow.	1844	Boulogne.	"The Pleasures of Hope ;" "Ye Mariners of England ;" "The Battle of the Baltic."
Poe, Edgar ...	1811	Baltimore.	1849	Baltimore.	"The Raven ;" "The Bells ;" "Israfel."
Wordsworth, Wm. ...	1770	Cockermouth.	1850	Rydal.	"Excursion."
Moore, Thos. ...	1779	Dublin.	1852	near Devizes.	National Songs, Irish, Hebrew, and Sacred. Satirical poems.
Montgomery, J....	1771	Irvine (Ayrshire).	1854	Sheffield.	"The World before the Flood." Hymns.
Rogers, S. ...	1763	Stoke Newington.	1855	London.	"The Pleasures of Memory ;" "Italy."
Macaulay, T. B. ...	1800	near Leicester.	1859	London.	"Lays of Ancient Rome."
Browning, Eliz. ...	1809	London.	1861	Florence.	"Aurora Leigh." Minor poems.
Aytoun, W. E. ...	1813	Edinburgh.	1865	Edinburgh.	"Lays of the Scottish Cavaliers."
Keble, Jno. ...	1792	Fairford.	1866	Bourne-mouth.	"Christian Year."
Bryant, Wm. C. ...	1794	Cumming-ton (Mass.).	1878	New York.	"The Waterfowl," and many other occasional poems.
Longfellow, H. W. ...	1807	Portland (Maine).	1882	Cambridge (Mass.).	"Evangeline ;" "The Song of Hiawatha." "Miles Standish," and many minor poems.
Browning, Robt. ...	1812	Camberwell.	1889	Venice.	"The Ring and the Book ;" "Pied Piper of Hamelin."
Tennyson, Alf. ...	1809	Somerby.	...	...	"In Memoriam ;" "Idylls of the King ;" "Ode on the Death of the Duke of Wellington."

## FOREIGN.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Homer ... ..	B.C. ...	Asia Minor.	B.C. ...	...	"Iliad"—ten years' siege and fall of Troy, recited about 900 B.C. "Odyssey"—wanderings of Ulysses, ten years.
Hesiod ... ..	...	N. Greece.	...	...	"Works and Days" (management of house and land; rules of life and education); "Theogony;" about 850.
Tyrtæus ... ..	...	Attica?	...	...	Spartan war-songs; about 676.
Alcæus ... ..	...	Mitylene.	...	...	Alcaic metre. Odes; fragments only remain; about 600.
Sappho ... ..	610	Mitylene.	580	Acarnania.	Sapphic metre; fragments only.
Confucius ... ..	about 550	Shan-tung.	479	Shan-tung.	"Schi-king;" psalms or songs; and most of the other Chinese sacred books.
Anacreon ... ..	about 560	Teos (Ionia).	about 476	Abdera?	Songs of social pleasure, love, and wine.
Pindar ... ..	522?	near Thebes (Bœotia).	about 440	...	"Epinikia" (Olympian, Pythian, Nemean, and Isthmian).
Theocritus ... ..	...	Syracuse.	...	...	"Idylls." Chief of the pastoral poets; about 280.
Valmiki ... ..	...	...	...	...	"Ramayana." Indian Homer; about 200.
Ennius ... ..	about 240	Calabria.	about 170	...	"Roman Annals."
Lucretius ... ..	95	Rome.	52	...	"De Rerum Natura;" Greek philosophy; Epicurean.
Catullus ... ..	86	near Verona.	about 47	...	"Peleus and Thetis;" Odes and Epigrams.
Virgil ... ..	70	Mantua.	19	Brundisium.	"Æneid;" "Georgics;" "Bucolics."
Tibullus ... ..	about 50	Rome.	about 18	Corcyra.	Elegies.
Propertius ... ..	56?	Umbria.	about 10	...	Elegies, four books.
Horace ... ..	65	Venusium.	8	Tarentum.	"Odes" (in Greek measures); "Satires;" "Ars Poetica."
Ovid ... ..	43	Sulmo.	18?	Tomos (Scythia).	"Fasti;" "Metamorphoses;" "Amores," &c.
Lucanus ... ..	A.D. about 38	Cordova.	65	Rome?	"Pharsalia."
Statius ... ..	61	Naples.	96	Naples.	"Thebais;" "Achilleis;" "Sylvæ."
Martial ... ..	40	Bilbilis.	about 104	Bilbilis.	Greatest Epigrammatist (fourteen books).
Juvenal ... ..	about 59	Aquinum.	about 128	Rome.	Fifteen Satires.
Motenebbi (Ahmed) ... ..	915	Kufa.	965	near Bagdad.	"Divan" (containing 289 poems).
Saadi ... ..	1175	Shiraz.	1263	...	"Gulistan." He wrote both in Arabic and Persian.
Dante ... ..	1265	Florence.	1321	Ravenna.	"Divina Commedia."
Petrarch ... ..	1304	Arezzo.	1374	near Padua.	Sonnets.



	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Boccaccio ... ..	A.D. 1313	Paris.	A.D. 1375	Certaldo.	"Decameron;" one hundred tales (partly borrowed from the Provençale).
Hafiz ... ..	about 1320	Shiraz.	1389	...	Most popular Persian poet (Anacreontic).
Ariosto ... ..	1474	Reggio (Modena).	1533	Ferrara.	"Orlando Furioso" (subject, the Paladins of Charlemagne against the Moors).
Vega, Garcilaso de la	1503	Toledo.	1536	Provence.	Prince of Spanish poets.
Hans Sachs ... ..	1494	Nurem- berg.	1576	Nurem- berg.	6,000 pieces.
Camoens ... ..	1524	Lisbon.	1579	Lisbon.	"Lusiad" (the story of Vasco de Gama and other Portuguese discoverers).
Ponce de Leon, L. ...	1527	Granada?	1591	Madrigal (Segovia).	Spanish lyric poet.
Tasso, Torquato ...	1544	Sorrento.	1595	Rome.	"Gerusalemme liberata."
Malherbe... ..	1555	Caen.	1628	...	Creator of French lyric poetry.
Vega, Lope de ... ..	1562	Madrid.	1635	Madrid.	An enormous number of mythological, historic, and comic poems; odes and elegies.
Faria y Sousa ... ..	1590	Portugal.	1649	Madrid.	200 sonnets, and twelve Eclogues in Portuguese, but a greater number in Spanish.
Cats, J. ... ..	1577	Zeeland.	1660	...	"Emblems."
Dekker, J. de ... ..	1609?	Dordrecht.	1666	Amsterdam.	Dutch poems, hymns, and epigrams.
Boileau, N. ... ..	1636	near Paris.	1711	...	"Art of Poetry;" "Satires;" epigrams.
Voltaire ... ..	1694	Paris.	1778	Paris.	"Henriade."
Bürger, G. A. ... ..	1748	near Halber- stadt.	1794	...	"Lenore;" "Der Wilde Jäger."
Klopstock, F. G. ...	1724	Quedlin- berg.	1803	Hamburg.	"Messias." He has been called the German Milton.
Schiller, F. ... ..	1759	Marbach.	1805	Weimar.	"Spatziergang;" "Glocke;" ballads.
Körner, T. ... ..	1791	Dresden.	1813	near Rosenberg.	"Lyre and Sword."
Bilderdijk ... ..	1756	Amster- dam.	1831	Haarlem.	Best modern Dutch. "Holland's Deliverance," 1813.
Goethe, Wolfgang ...	1749	Frankfort- on-Main.	1832	Weimar.	Songs, short poems, elegies, distichs.
Puschkin... ..	1799	St. Peters- burg.	1837	St. Peters- burg.	"Russlan and Ljudmilla" (heroes of Old Russia).
Chamisso ... ..	1781	Boncourt.	1838	Berlin.	"Peter Schlemil," the shadowless man.
Kisfaludy... ..	1777	Hungary.	1844	Sumeg (Hungary).	Hungarian patriotic lyrics.
Tegner ... ..	1782	Hyfkaras (Werm- land).	1846	Wexiö (Små- land).	"Frithiofs-Saga," &c.
Heine, H. ... ..	1799	Düsseldorf.	1856	Paris.	Songs.
Beranger... ..	1780	Paris.	1857	Paris.	The French Burns.
Arndt ... ..	1769	I. Rügen.	1860	Bonn.	"Des Deutschen Vaterland;" "Der Feldmarschall."
Uhland ... ..	1787	Tübingen.	1862	Tübingen.	Songs and ballads.
Hugo, Victor ... ..	1802	Besançon.	1885	Paris.	"Chants du Crépuscule;" "Voix intérieures;" "Feuilles d'Automne."

# DRAMATISTS.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Æschylus ... ..	B.C. 525	Eleusis.	B.C. 456	Gela (Sicily).	First great tragic poet. "Agamemnon;" "The Choephor;" "The Eumenides."
Sophocles ... ..	495	Colonus (near Athens).	406	Colonus.	Second great tragic poet. "Antigone;" "Electra;" "Cedipus." In all seven are extant.
Euripides ... ..	480	Salamis.	406?	Macedonia.	Third great tragic poet. His works abound in neat quotable sayings.
Aristophanes ... ..	about 450	Athens.	about 380	...	First great comic poet.
Menander ... ..	342	Athens.	about 292	...	Precursor of modern comedy. Of 108 he is known to have written, little remains.
Plautus ... ..	255	Sarsina (Umbria).	184	...	Imitator of Aristophanes.
Terence ... ..	about 195 A.D.	Carthage.	about 155 A.D.	Arcadia.	Clever adapter of Menander to social habits of Rome.
Trissino ... ..	1478	Vicenza.	1550?	Rome.	"Sophonisba." First revived tragedy.
Marlowe, C. ... ..	about 1563	Canterbury.	1593	Deptford.	"Tamerlane the Great;" "The Jew of Malta."
Shakespeare, W....	1564	Stratford-on-Avon.	1616	Stratford.	Chief of the romantic school. "Midsummer Night's Dream;" "Merchant of Venice;" "Hamlet;" "Othello;" "Macbeth;" "King Lear;" "Tempest;" "Romeo and Juliet;" the historical plays, and many others.
Beaumont, F. ... ..	1585	Leicester-shire.	1616?	...	} "The Woman Hater;" "Cupid's Revenge."
Fletcher, J. ... ..	1576	Northants.	1625	London.	1,500 comedies.
Vega, Lope de ... ..	1562	Madrid.	1635	Madrid.	
Jonson, Ben ... ..	1574	Westminster.	1637	...	
Massinger, P. ... ..	1584	Salisbury.	about 1640	Southwark.	"Every Man in his Humour;" "The Alchemist," and about 15 others.
Molière ... ..	1622	Paris.	1673	Paris.	"New Way to Pay Old Debts;" "Maid of Honour," and 16 others.
Calderon... ..	1600?	Madrid.	about 1681	...	Greatest French dramatist. "Tartuffe;" "Le Misanthrope;" "Les Femmes Savantes;" "Le Médecin malgré lui;" "Le Malade Imaginaire."
Cornille... ..	1606	Rouen.	1684	Paris.	128 dramatic pieces.
Otway, T. ... ..	1651	near Midhurst.	1685	London.	"The Cid;" "Cinna;" "The Horatii;" "Pysché;" "Festin de Pierre."
Racine ... ..	1639	Ferte Milon.	1699	...	"Venice Preserved."
Rowe, N. ... ..	1673	near St. Neots.	1718	...	Greatest French tragic writer. "Athalie."
					"The Fair Penitent," and other social and historic dramas.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Steele, R. ... ..	A.D. 1671	Dublin.	A.D. 1729	near Carmar- then.	"Grief à la Mode;" "The Conscious Lovers." In all six dramas.
Gay, J. ... ..	1688	Barnstaple.	1732	London.	"Beggars' Opera."
Goldsmith, O. ... ..	1728	Pallas.	1774	London.	"The Good-natured Man;" "She Stoops to Conquer."
Lessing, G. E. ... ..	1729	near Dresden.	1781	Hamburg.	"Minna von Barnhelm;" "Nathan der Weise."
Metastasio ... ..	1698	Rome (?)	1782	Vienna.	26 operas and sacred dramas.
Alfieri ... ..	1749	Asti (Pied- mont).	1803	Florence.	"Cleopatra;" "Saul;" "Philip II.;" "Mary Stuart."
Schiller ... ..	1759	Marpach.	1805	Weimar.	"William Tell."
Sheridan ... ..	1751	Dublin.	1816	London.	"School for Scandal;" "The Rivals;" "The Critic," and others.
Kotzebue ... ..	1761	Weimar.	1819	Mannheim.	98 plays.
Byron ... ..	1788	London.	1824	Missolong- hi.	"Cain;" "Manfred."
Goethe ... ..	1749	Frankfort- on-the- Main.	1832	Weimar.	"Faust;" "Götz von Berlichingen."
Oehlenschläger, A. G....	1779	Copen- hagen.	1850	Copen- hagen.	Danish drama. "Hakon Jarl."
Hugo, V. ... ..	1802	Besançon.	1885	Paris.	"Cromwell;" "Hernani;" "Le Roi s'amuse," &c.

# III.—WAR AND GOVERNMENT.

## GENERALS.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Cyrus ... ..	B.C. 590	...	B.C. 529	Turkestan.	Defeated Croesus, took Babylon, fell in Scythia.
Miltiades... ..	...	Athens.	...	Athens.	With 10,000 Athenians and Plataeans he defeated 110,000 Persians at Marathon, 490 B.C.
Themistocles ... ..	514	Athens.	449	Magnesia.	Destroyed Persian fleet at Salamis, 480.
Epaminondas ... ..	411	Thebes.	363	Mantineia.	Raised Thebes by his victory at Leuctra to be the ruling city of Greece.
Philip of Macedon ... ..	382	...	336	Edessa (Macedonia).	Reduced Greece under the supremacy of Macedonia.
Alexander the Great ... ..	356	Pella.	323	Babylon.	After fighting the battles of Granicus, Issus, and Arbela, he conquered Asia Minor, Phœnicia, Persia, and Northern India.
Marcellus ... ..	268	...	208	Venusia.	Siege of Syracuse, 212. Several times in conflict with Hannibal; in which he finally fell. Called the "Sword of Rome."
Fabius "Cunctator" ... ..	275	...	203	...	After the battle of Cannæ he gradually weakened Hannibal by a cautious and watchful policy, and in four years compelled him to retreat to Africa.
Hannibal ... ..	247	...	183	Bithynia.	Subjugated Spain, traversed Gaul and the Alps, invaded Italy, and brought Rome to its lowest point at Cannæ, 215.
Scipio, P. C. (Africanus) ... ..	234	...	183	Campania.	Conquered Spain, crossed to Africa, causing Hannibal to evacuate Italy; defeated him at Zama, 202.
Jugurtha ... ..	154	...	104	Cirta (Numidia).	Defied the power of Rome for six years, 112—106.
Marius, Caius ... ..	157	Arpinum.	86	Rome.	Overthrew Jugurtha and defeated the Teutons at Aix, Provence.
Cæsar, J. ... ..	100	Rome.	44	Rome.	Conquered Gaul, invaded Britain, and subjugated Rome.
Arminius (Hermann) ... ..	B.C. 18	...	A.D. 19	...	Destroyed three Roman legions (50,000 men), and freed Germany for a time.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Germanicus ... ..	B. C. 15	...	A. D. 19	near Antioch (Syria).	After Hermann's victories, he restored Roman supremacy in Germany.
Vercingetorix ... ..	...	...	46	...	Cæsar's most worthy adversary.
Titus ... ..	A. D. 40	...	81	near Reate.	Took Jerusalem after a desperate defence, 70 A. D.
Agricola ... ..	about 37	Frejus.	93	...	Extended Roman Britain to the Clyde and Forth.
Trajan ... ..	52	Andalusia.	117	Cilicia.	Conquered the Dacians, and Parthians.
Alaric ... ..	...	...	410	Cosenza.	Besieged Rome three times, and finally took and sacked it.
Attila ... ..	...	...	453	Hungary.	King of the Huns. "The Scourge of God." Invaded both Eastern and Western Empire.
Genseric ... ..	406	Seville.	477	Carthage.	From Spain conquered North Africa and plundered Rome, 455.
Totila ... ..	...	...	552	near Rome.	King of the Ostrogoths; overran Italy and Sicily, took Rome twice.
Belisarius ... ..	505	Illyria.	565	Constanti- nople.	Justinian's general; fought against Goths, Vandals, and Huns.
Abderrahman ... ..	...	...	732	...	Conquered Southern Gaul; was defeated at Tours and Narbonne by Charles Martel, 732.
Martel, Charles ... ..	about 690	...	741	near Crecy.	Turned back Mahometan armies which were conquering Europe from the west. Tours, 732.
Charlemagne ... ..	742	Salzburg.	814	Aix-la- Chapelle.	Frankish leader; conquered Saxons under Witikind; also South France, and Spain to the Ebro, and the Saracens in Italy.
Alfred the Great ... ..	849	Wantage.	901	...	Defeated the Danes by sea and land.
William the Conqueror ... ..	1027	Falaise.	1087	Rouen.	Norman conquest of Saxon Britain.
Cid (Rodrigo Diaz de Bivar) ... ..	1040	Burgos.	1099	Valencia.	Moorish war.
Godfrey de Bouillon ... ..	1061	Brabant.	1100	Jerusalem.	Leader of the first crusade. Fought his way to Jerusalem, besieged and stormed it, 1099.
Genghis-Khan ... ..	1163	Tartary.	1227	...	Ravaged Asia from China to Persia, destruction of human beings computed at five millions.
Wallace, Wm. ... ..	1270	Renfrew- shire.	1305	London.	Scottish guerilla leader in the time of Edward I.
Duquesclin ... ..	1314	Brittany.	1380	Lozère.	Retook Normandy, Guienne, Poitou.
Timur (Tamerlane) ... ..	1336	Samar- cand.	1405	Khokan.	Conquered Central Asia from China to Syria. Made Samarkand the centre of learning and power of the Eastern World.
Joan of Arc ... ..	1410	Domremy.	1431	Rouen.	Raised siege of Orleans and defeated Talbot at Patay.
Alva ... ..	1508	...	1582	Lisbon.	The most merciless opponent of the Reformation. He defeated the Elector of Saxony, reconquered the Netherlands and Portugal.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Parma ... ..	A.D. 1546	...	A.D. 1592	Arras.	Siege of Antwerp and other towns in the Netherlands. Raising of the siege of Paris.
Akbar ... ..	1542	...	1605	...	Conquered Delhi and the Punjab.
Tilly ... ..	1559	near Brussels.	1632	Ingolstadt.	In the thirty years' war he won the victories of Prague and Stadt-Loo, sacked Magdeburg, was defeated by Gustavus Adolphus at Breitenfeld and on the Lech.
Gustavus Adolphus ...	1594	Stockholm.	1632	Lutzen.	Defeated Tilly at Leipsic, 1631; and Wallenstein at Lutzen, 1632.
Wallenstein ... ..	1583	Bohemia.	1634	Eger (Bohemia).	Imperialist general in the thirty years' war.
Cromwell, O. ... ..	1599	Huntingdon.	1658	Whitehall.	Conquered in England, Scotland, and Ireland.
Rupert ... ..	1619	...	1682	London.	Ablest leader of the Royalists in the Parliamentary war.
Schomberg ... ..	1616	Heidelberg.	1690	Boyne.	Marshal of France; Protestant and exile; served in several European armies; slain at the victory of the Boyne.
Luxembourg ... ..	1628	...	1695	...	Fleurus, 1690; Steinkirch, 1692; Neerwinden or Landen, 1693.
Sobieski, Jno. ... ..	1629	Galicia.	1696	Warsaw.	Defeated the Turks in several battles, and raised the siege of Vienna.
Marlborough ... ..	1650	Ashe (Devon).	1722	Windsor Lodge.	With Prince Eugene he defeated the French at Blenheim, 1704; Oudenarde, 1708; Malplaquet, 1709.
Peter the Great ... ..	1672	Moscow.	1725	St. Petersburg.	Defeated Charles XII. of Sweden at Pultowa.
Eugene, Prince ... ..	1663	Paris.	1736	Vienna.	Defeated Turks at Peterwardein and Belgrade.
Saxe, M. ... ..	1696	Dresden.	1750	...	Commanded the French against the Allies at Fontenoy, 1745; and Lahfeldt, 1747.
Daun, Marshal ... ..	1705	Vienna.	1766	Vienna.	Defeated Frederick the Great at Kollin, 1757; and Hochkirchen, 1758.
Clive ... ..	1725	near Market Drayton.	1774	London.	Arcot and Plassey.
Frederic the Great ...	1712	Berlin.	1786	Sans Souci.	Created Prussia. Withstood coalition of France, Russia, and Austria.
Heathfield (Elliott) ...	1718	near Hawick.	1790	Aix-la-Chapelle.	Defence of Gibraltar against French and Spaniards.
Washington ... ..	1732	Virginia.	1799	Mt. Vernon.	By Fabian tactics and French help he withstood the English forces for eight years, 1776—1784, securing the independence of the United States.
Suwarrow ... ..	1730	Finland.	1800	St. Petersburg.	Defeated Tartars and Turks at Kinburn and Ismail; also the Poles and French.
Ney ... ..	1769	Sarrelouis.	1815	Paris.	Called by Napoleon the "bravest of the brave"; shot as a traitor.
Murat ... ..	1771	near Cahors.	1815	Pizzo.	Aboukir, Marengo, Austerlitz, Eylau, Friedland; tried and shot.
Massena ... ..	1758	Nice.	1817	Paris.	Battles of Zurich, Essling and Wagram, Torres Vedras.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Platoff ... ..	A.D. 1763	S. Russia.	A.D. 1818	S. Russia.	Hetman of the Cossacks. With twenty regiments he largely contributed to destroy the French invaders of Russia, 1812.
Blücher ... ..	1742	Rostock.	1819	Silesia.	Lutzen, Leipsic, Ligny, and Waterloo.
Napoleon ... ..	1769	Ajaccio.	1821	St. Helena.	1st, Defeats the Austrians in many battles from Montenotte to the Tagliamento, 1796—7. 2nd, Conquest of Egypt and Syria, 1798—9. 3rd, Defeats Austrians from Montebello to Austerlitz, 1800—5. 4th, Defeats Prussia and Russia from Jena to Friedland, 1806—7. 5th, Defeats Austrians from Eckmühl to Wagram, 1809. 6th, Russian campaign, Borodino, Leipsic, banished to Elba, 1812—14. 7th, 100 days—Waterloo, 1815.
Lutzow ... ..	1782	Mittelmark.	1824	Berlin.	Guerilla leader in the uprising of Germany, 1813.
Wellington ... ..	1769	Dangan (Meath).	1852	Walmer Castle.	1st, India, battles of Assaye—Argaum, 1799—1803; 2nd, Peninsular War, Talavera—Vittoria, 1809—13; 3rd, Nivelle—Toulouse, 1813—4; 4th, Waterloo, 1815.
Hardinge, H. ... ..	1785	Wrotham (Kent).	1856	near Tunbridge Wells.	Conquered the Sikhs at Moodkee, Ferozeshah, Sobraon, and Aliwal, 1845.
Havelock, H. ... ..	1795	Bishop Wearmouth.	1857	Cawnpore.	Indian Mutiny.
Jackson, T. J. (Stonewall)	1824	West Virginia.	1863	Chancellorsville.	} American slave war; Confederate generals.
Lee, Robt. E. ... ..	1808	Co. Westmoreland (Va.).	1870	Lexington (Va.).	
Roon, Von ... ..	1803	near Colberg.	1879	Berlin.	Austrian war, 1866; Franco-German war, 1870—1.
Garibaldi ... ..	1807	Nice.	1882	Caprera.	Guerilla campaigns in Brazil, Lombardy, Sicily and Naples, Tyrol, Papal States and Vosges.
Gordon, C. G. ... ..	1833	Woolwich.	1885	Khartoum.	Organised the troops of China, and extinguished Taeping rebellion, 1863; sent to the Soudan by the Khedive, 1873; in Abyssinia, 1879; sent to Khartoum by England.
Grant, Ulysses ... ..	1828	Co. Clermont (Ohio).	1885	near Saratoga.	Brought American slave war to an end.
Napier of Magdala ... ..	1810	Ceylon.	1890	London.	Abyssinian expedition. Storming of Magdala, 1868.
Moltke, Von ... ..	1800	Parchim (Mecklenburg).	...	...	Strategist of the Franco-Prussian war of 1870—1.
Wolsely, Garnet ... ..	1833	Co. Dublin.	...	...	Burmah, Sebastopol, Indian Mutiny, China, Red River, Ashantee, Tel-el-Kebir. "Soldiers' Pocket-book."

## MILITARY ENGINEERS, &amp;c.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Bacon, Roger ... ..	A. D. 1214	Ilchester.	A. D. 1292	Oxford.	Explosives—gunpowder. Conducted fifty-three sieges, and erected thirty-three fortresses. "Traité de l'Attaque des Places," and "Traité de Défense," published posthumously.
Vauban ... ..	1633	near Autun.	1707	...	
Carnot, L. ... ..	1753	Nolay (Burgundy).	1823	Magdeburg.	"De la Défense des Places Fortes."—Defence of Antwerp, 1814.
Congreve, W. ... ..	1772	Middlesex.	1828	Toulouse.	Rocket.
Shrapnel, Henry ... ..	...	...	1842	near Southamp- ton.	Shell or case shot.
Forsyth, A. J. ... ..	1769	near Aberdeen.	1843	...	Percussion cap, 1807.
Colt, Samuel ... ..	1814	Hartford (Conn.).	1862	Hartford.	Revolver, 1835.
Schönbein, C. F. ... ..	1797	Basle.	1868	...	Gun-cotton, 1846.
Sobrero, A. ... ..	...	...	...	...	Nitro-glycerine, 1847.
Todleben ... ..	1817	Mittau.	1884	near Frankfort-on-Main.	Earthworks and ship's guns. Defence of Sevastopol, 1854—5. Successful siege of Plevna, 1877.
Krupp, A. ... ..	1810	...	1887	...	Largest cannon.
Ericsson ... ..	1803	Wermland (Sweden).	1889	...	Turret ironclad— <i>Monitor</i> , 1862.
Nobel, Alfred ... ..	...	...	...	...	By adding inert substances to nitro-glycerine, he rendered it practically useful—dynamite, 1867.
Whitehead ... ..	...	...	...	...	Travelling torpedo.

## NAVAL COMMANDERS.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Duilius, Caius ... ..	B. C. ...	...	B. C. ...	...	Founder of Roman navy. Won the first sea-fight over the Carthaginians, 260 B. C.
Catulus, Q. L. ... ..	...	...	...	...	
Alfred the Great ... ..	A. D. 849	Wantage.	A. D. 901	...	Defeated Hanno's fleet, ending first Punic War, 241. Founded the English fleet, and defeated the Danes.



	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Hawkins... ..	A.D. about 1521	Plymouth.	A.D. 1595	W. Indies.	Spanish Armada.
Drake ... ..	1545	Tavistock.	1595	Nombre de Dios.	Served against Spain in South Seas, West Indies, and at Cadiz. He helped to de- stroy the Spanish Armada, 1588.
Howard of Effingham ...	1536	...	1624	...	Repulsed Spanish Armada, 1588. De- stroyed fleet at Cadiz, 1596.
Van Tromp ... ..	1597	Brielle.	1653	Dutch coast.	Defeated Spanish fleet. Blake's worthy opponent in many fights. Fell in the three-day battle, 1653.
Blake ... ..	1599	Bridge- water.	1657	off Plymouth.	Encountered Van Tromp with varying fortune, but ultimate complete success, 1652-53.
Monk, Geo. ... ..	1608	near Torrington.	1670	near Colchester.	Defeated De Ruyter at the North Foreland, 1666.
Ruyter, De ... ..	1607	Flushing.	1676	Syracuse.	Attack on Sheerness, 1667.
Rooke, Geo. ... ..	1650	near Canter- bury.	1709	near Canter- bury.	Capture of Gibraltar, 1704.
Russell, Edward ...	1651	...	1727	...	La Hogue, 1692.
Boscawen, Edward ...	1711	Cornwall.	1761	near E. Clandon (Surrey).	Defeated French off Lagos, Portugal, 1759.
Anson, G. ... ..	1697	near Rugeley.	1762	near Rickmans- worth.	Defeated French fleet off Cape Finisterre.
Hawke, Edward ...	1713	...	1781	...	Defeated French off Finisterre, 1747; and in Quiberon Bay, 1759.
Rodney ... ..	1718	Walton-on- Thames.	1792	London.	Defeated Spanish at Cape St. Vincent, 1780; and West Indies, 1782.
Jones, J. Paul ... ..	1747	Kirkcud- bright.	1792	Paris.	Founder of American navy.
Howe, Richard ... ..	1725	...	1799	...	"Glorious 1st of June"—Defeated the French off Ushant, 1794.
Duncan of Camperdown	1731	near Dundee.	1804	near Cold- stream.	Dutch defeated off Camperdown, 1797.
Nelson, Horatio ...	1758	Burnham Thorpe (Norfolk).	1805	Trafalgar.	Battle of the Nile, 1798; Copenhagen, 1801; Trafalgar, 1805.
Hood, Samuel ... ..	1724	near Lyme Regis.	1816	Bath.	Capture of Toulon, 1793.
Vincent, St. ... ..	1734	near Stafford.	1823	Essex.	Cape St. Vincent, 1797.
Exmouth... ..	1757	Dover.	1833	Teign- mouth.	Bombarded Algiers, ending piracy in the Mediterranean, 1816.
Smith, Sydney ... ..	1764	Westmin- ster.	1840	Paris.	Defence of St. Jean d'Acre against Buona- parte, 1799.
Cochrane ... ..	1775	Lanark.	1860	...	Attack on the French fleet in the Basque Roads, 1809; and Spanish American In- dependence.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Napier, C. ... ..	A.D. 1786	Stirling-shire.	A.D. 1860	near Ports-mouth.	Storming of Sidon—Baltic.
Tegethoffs ... ..	1827	Marburg (Styria).	1871	Vienna.	Defeated Danes off Heligoland, 1864; at Lissa, Adriatic, he defeated Italian fleet, 1866.

## STATESMEN, JURISTS, &amp;c.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Menu ... ..	B.C.	...	B.C.	...	Hindu law.
Lycurgus... ..	...	...	...	Crete.	Spartan law, about 880 B.C.
Draco ... ..	...	Athens.	...	Ægina.	Severest code, 624.
Solon ... ..	...	Salamis.	...	Cyprus.	Athenian law, 594.
Pericles ... ..	499	Athens.	429	...	Raised Athens to her highest glory.
Plato ... ..	429	Athens (?)	349	...	"Republic."
Demosthenes ... ..	about 382	Athens.	322	I. Calauria (Argolis).	Greatest orator of Greece.
Cicero ... ..	106	Arpinum.	43	near Rome (?)	Last and most eloquent of Rome's Republicans.
Trebonian ... ..	A.D. 510	Pamphylia.	A.D. 547	...	Justinian's Code. "Pandects."
Machiavelli ... ..	1469	Florence.	1527	Florence.	"Principe."
Wolsey ... ..	1471	Ipswich.	1530	Leicester.	Perhaps the most powerful of English Ministers.
Coke, Edward ... ..	1551	Mileham (Norfolk)	1633	Stoke Pogis.	"Institutes of the Laws of England," 1628.
Strafford ... ..	1593	London.	1641	Tower Hill.	Conservative statesman of Charles I.
Richelieu ... ..	1585	Paris.	1642	Paris.	Extinguished Protestantism and liberty in France.
Pym, John ... ..	1584	Somerset.	1643	London.	Parliamentarian statesman of Charles I.
Hampden, John ... ..	1594	London.	1643	Bucks.	Moderate Liberal of Charles I.
Falkland... ..	1610	Burford (Oxon.).	1643	Newbury.	Moderate Conservative of Charles I.
Grotius ... ..	1583	Delft.	1645	Rostock.	"De Jure Belli et Pacis."
Hobbes, T. ... ..	1588	Malmesbury.	1679	Chatsworth.	"De Cive;" "Leviathan."
Puffendorf, S. ... ..	1631	Chemnitz.	1694	Berlin.	"De Jure Naturæ et Gentium."
Erskine, John ... ..	1695	near Dunfermline.	1765	Cardross.	"Institutes of the Laws of Scotland."

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Vattel, E. ... ..	A. D. 1714	Neufchâtel.	A. D. 1767	Neufchâtel.	"Droit des Gens," 1758.
Blackstone, W. ... ..	1723	London.	1780	...	"Commentaries on the Laws of England."
Smith, Adam ... ..	1723	Kirkcaldy.	1790	Edinburgh.	"Wealth of Nations," 1776.
Malesherbes ... ..	1721	Paris.	1794	Paris.	Opposed the abolition of the French Parliament, 1771; but proved the most faithful of the King's adherents. Guillotined.
Burke, Edmund... ..	1730	Dublin.	1797	Beaconsfield.	The most eloquent and sensible of the English political reformers of the 18th century.
Washington, G.... ..	1732	Virginia.	1799	Mount Vernon.	Founded American Republic.
Pitt, Wm. ... ..	1759	Hayes.	1806	Putney.	Prime Minister during the American War and French Revolution. "The Pilot who weathered the Storm."
Bolivar ... ..	1783	Caraccas.	1830	San Pedro (Columbia).	Liberator of Spanish South America.
Malthus, T. R. ... ..	1766	Albury (Surrey).	1834	Bath.	"On Population."
Wheaton, H. ... ..	1785	Rhode Island.	1848	Dorchester (Mass.).	"Elements of International Law;" "History of International Law."
Peel, Robert ... ..	1788	near Bury.	1850	London.	Roman Catholic emancipation; Free Trade in corn.
Cavour ... ..	1810	Turin.	1861	Turin.	Creator of the Italian Kingdom.
McCulloch, J. R. ... ..	1789	Whithorn (Wigton).	1864	London.	Dictionary of Commerce and Commercial Navigation, 1832; Statistical Account of the British Empire, 1837.
Cobden, Richard ... ..	1804	Midhurst.	1865	London.	Free Trade in corn.
Russell, J. ... ..	1792	London.	1878	Richmond (Surrey).	Reform of Parliament, 1832.
Bismarck, O. von ... ..	1815	Schönhausen.	...	...	Creator of the present German Empire.

## IV.—SCIENCE.

## I.—Abstract.

## MATHEMATICS.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Thales ... ..	B.C. about 640	Miletus.	B.C. 545	Athens.	Geometry of the triangle and circle.
Pythagoras ... ..	586	Samos.	506	Metapontum.	The multiplication table, and several important propositions in geometry.
Plato ... ..	429	Athens.	348	Athens.	Conic sections, 390 B.C.
Euclid ... ..	...	Alexandria.	...	...	"Elements of Geometry" (300 B.C.), the only scientific school-book 2,000 years old. The seventh, eighth, and ninth books form the first known treatise on arithmetic.
Archimedes ... ..	287	Syracuse.	212	Syracuse.	Best Greek mathematician. In his treatise on spirals, cones, and spheres, he used the method of limits.
Diophantus ... ..	A.D. ...	Alexandria.	A.D. ...	...	Earliest extant work on algebra, about 360 A.D.
Regiomontanus ... (John Müller)	1436	Königsberg. Coburg.	1476	Rome.	Improved algebra, and used the tangent in trigonometry.
Cardan, Jerome ...	1501	Pavia.	1576	Rome.	Algebra—solution of equations.
Napier, J. ... ..	1550	Merchiston. near Halifax.	1617	Merchiston.	Logarithms—(Napierian or Hyperbolic).
Briggs, Henry ...	1556	near Halifax.	1631	Oxford.	Tables of logarithms to fourteen places of decimals, afterwards extended to sines and tangents, both logarithmic and natural.
Descartes ... ..	1596	near Tours.	1650	Stockholm.	Introduced exponents or indices of powers, and expressed curves by equations and co-ordinates.
Barrow, I. ... ..	1630	London.	1677	London.	Differential triangle.
Wallis, John ...	1616	Ashford.	1703	Oxford.	"Arithmetic of Infinities," 1655 — Solved many of the problems of the integral calculus.
Bernoulli, James ...	1654	Basle.	1705	Basle.	Properties of curves, and application of differential calculus to mechanics.
Leibnitz ... ..	1646	Leipsic.	1716	Hanover.	Differential calculus.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Newton, I. ... ..	A.D. 1642	Woolsthorpe.	A.D. 1727	London.	Method of Fluxions — "Differential Method." Binomial theorem. Area of curves.
Taylor, Brook ... ..	1685	Edmonton.	1731	..	Taylor's theorem, 1715—adopted by Lagrange in 1772 as the basis of the differential calculus.
Euler, L. ... ..	1707	Basle.	1783	St. Petersburg.	Differential and integral calculus widely applied.
Condorcet ... ..	1743	Picardy.	1794	Paris.	Integral calculus—Problem of three bodies.
Lagrange, J. L....	1736	Turin.	1813	...	"Mécanique Analytique"—Numerical solution of equations of all degrees.
Laplace, P. S. ... ..	1749	Calvados.	1827	Paris.	Theory of probabilities, 1812—25.

## II.—Of the Earth.

### GEOGRAPHERS.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Thales ... ..	B.C. about 640	Miletus.	B.C. 545	Athens.	Taught that the earth was round—Divided it into five zones.
Anaximander ... ..	610	Miletus.	546	...	Made maps and a sphere.
Herodotus ... ..	484	Halicanassus.	408	...	Described the then known world.
Eratosthenes ... ..	276	Cyrene.	194	...	First treated geography as a science—Circumference of the earth calculated accurately from a measured degree.
Hipparchus ... ..	160	Nice (Bithynia).	125	...	Invented the stereographic projection.
Strabo ... ..	60	Amasia.	A.D. about 20	...	"Geography," in seventeen books.
Pliny ... ..	A.D. 23	Verona.	79	Vesuvius.	Spain to India, Ethiopia to Scythia.
Ptolemy, Claudius ... ..	70	Pelusium.	161	...	Latitude and longitude of a large number of places—Geometry of map projection.
Edrisi (Abu Abdallah Mohammed)	1099	Ceuta.	about 1180	...	Under King Roger of Sicily he mapped the world on a silver globe, and described it in a book.
Abulfeda ... ..	1275	Damascus.	1331	Hamah.	"System of Universal Geography."

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Mercator (Kremer, G.)...	A. D. 1512	Roermond.	A. D. 1594	Duisberg.	Cylindrical projection on which a straight line represents a course straight by compass, 1556.
Humboldt, Alex...	1769	Berlin.	1859	Berlin.	Comparative climatology.
Somerville, Mary ...	1780	Jedburgh.	1872	Naples.	"Physical Geography," 1848.
Maury, M. F. ...	1806	Spotsylvania (Va.).	1873	Lexington.	Deep-sea soundings.

## EXPLORERS.

## AFRICA.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Hanno ... ..	B. C. ...	...	B. C. ...	...	West Coast of Africa to Sierra Leone, about 550 B. C.—"Periplus" (circumnavigation) at least partially, fabulous.
Cama, Diego de...	A. D. ...	...	A. D. ...	...	Coast of Congo, Angola, and Benguela, 1484.
Diaz, B. ... ..	...	Portugal.	1500	off Brazil.	Cape of Good Hope, 1487.
Gama, Vasco de ...	...	Sines.	about 1525	Cochin (South India).	Eastern coast, 1497.
Almeida, Lorenzo ...	...	...	1508	Gulf of Cambay.	South Madagascar, 1506.
Alvarez, Francisco ...	about 1495	Coimbra.	1540?	...	Abyssinia, 1520.
Bruce, James ... ..	1730	Kinnaird (Stirling).	1794	Kinnaird.	Blue Nile, Abyssinia, 1768—73.
Park, Mungo ... ..	1771	near Selkirk.	1805	Boussa, on the Niger	Sources of the Gambia, Senegal, and Niger rivers, 1795—97
Hornemann ... ..	1772	Hildesheim.	...	Timbuctoo.	Tripoli to Lake Tchad, 1797—1800.
Clapperton ... ..	1788	Annan.	1827	Sokoto.	First to cross the Sahara, 1822; Bornu and Lake Tchad.
Iaing, A. G. ... ..	1793	Edinburgh.	1826	Timbuctoo.	The sources of the Niger; Timbuctoo.
Lander, R. ... ..	1804	Truro.	1834	Fernando Po.	Discovered the outlet of the previously-known Upper Niger, 1830.
Krapf, J. L. ... ..	1809	Würtemberg.	1881	...	Mounts Kilimanjaro and Kenia, 1849—51.
Livingstone ... ..	1813	Blantyre.	1873	Ilala.	Kalahari Desert; Upper Zambesi to Loanda; Victoria Falls and Lower Zambesi, 1849—54; Lakes Shirwa and Nyassa, 1859—60; Lakes Bangweolo and Moero, and the River Luapula, 1866—71.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Burton ... ..	A.D. 1821	...	A.D. 1890	Trieste.	Tanganyika, 1858.
Speke, J. H. ... ..	1827	...	1864	near Bath.	Lake Tanganyika, Victoria Nyanza, 1858.
Baker, Samuel ... ..	1821	London.	...	...	Albert Nyanza, 1864.
Schweinfurth, G. ... ..	...	...	...	...	Western sources of White Nile, and northern of Congo, 1870.
Stanley, H. M. ... ..	1841	near Denbigh.	...	...	Circumnavigated Victoria Nyanza and Tanganyika; traced the Congo from lakes to sea, 1875-77. Explored the Aruwimi, and the Great Forest to Nile; discovered Semliki River, Ruwenzori Mountains, and Lake Albert Edward, 1887-89.

## AUSTRALASIA.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Saavedra ... ..	A.D. ...	...	A.D. ...	...	South-West Papua, 1528.
Drake ... ..	1545	Tavistock.	1595	Nombre de Dios.	Circumnavigation of the globe, 1577-80.
Torres ... ..	...	...	...	...	Torres Straits, 1606.
Zeachen ... ..	...	...	...	...	North Coast, 1618.
Edels ... ..	...	...	...	...	West Coast, 1619.
Nuyts ... ..	...	...	...	...	Australian Bight.
Tasman, A. J. ... ..	1600	Hloorn.	...	...	Tasmania and New Zealand, 1642-44.
Dampier ... ..	1652	near Yeovil.	1712	London.	North-West Coast, 1684-90.
Wallis, Samuel ... ..	1720	...	1795	London.	South Pacific, 1766.
Carteret, P. ... ..	...	...	1796	Southamp-ton.	South Pacific, 1766.
Cook, J. ... ..	1728	near Bingley.	1779	Hawaii.	Circumnavigated New Zealand, 1769-70; Cook Strait; Botany Bay, 1770; reached latitude 71° 10' South, 1774; sailed round the ice of the Southern Ocean.
Flinders, Mat. ... ..	1774	Donington.	1814	...	East Coast, 1795-1804.
Bass, Geo. ... ..	...	near Sleaford (Lincoln).	1812	...	Bass' Straits, 1798.
Biscoe, John ... ..	...	...	...	...	Discovered Southern Continent—Graham Land, 1831; Enderby Land, 1832.
Eyre ... ..	...	...	...	...	Shore of Bight, 1836-40.
Wilkes, Chas. ... ..	1798	New York.	1877	...	Wilkes' Land, 1840.
Ross, J. C. ... ..	1800	London.	1862	Aylesbury.	Antarctic Seas, 1840; Victoria Land; Mounts Erebus and Terror; reached S. latitude 78°, 1841.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
	A. D.		A. D.		
Sturt ... ..	...	...	1869	Cheltenham.	Darling River, 1827—31; Central Australia, 1844—46.
Kennedy...	...	...	1848	...	Cape York peninsula, 1847—48.
Gregory, A. C. ...	...	...	...	...	Northern Territory, 1856.
Burke, O'Hara ...	...	...	1861	...	First who crossed continent of Australia, from lakes to Gulf of Carpentaria, 1861.
Wills, W. J. ...	1834	Totnes.	1861	...	
Stuart, J. McD.	1818	...	1866	London.	Crossed Australia (Port Darwin to Spencer, 1860—62).
Forrest, J. ...	...	...	...	...	South West Australia, 1869—74.
Warburton ...	...	...	...	...	Dampier Land to Spencer Gulf, 1873.

## EUROPE AND ASIA.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
	B. C.		B. C.		
Pytheas ... ..	...	Marseilles.	...	...	Norwegian coast (?), 330 B.C.
Nearchus ... ..	...	...	...	...	Indus to Euphrates, 325 B.C.
	A. D.		A. D.		
Wolfstan ... ..	...	Norway.	...	...	Sailed round North Cape, 860 A.D.; Iceland, 861.
Polo, Marco ...	1250	Venice.	1323	Venice.	Central Asia, Mongolia, China, Japan, and further India, 1271—95.
Gama, Vasco di...	...	Sines.	about 1525	Cochin (S. India).	Route to India by the Cape, 1499.
Magellan, F. ...	1470	Oporto.	1521	Philippine Islands.	Philippine Islands, 1521. His ship, the <i>Victoria</i> , was the first to pass round the world, 1519—21.
Xavier, Fr. ...	1506	Navarre.	1552	off China.	Japan, 1549.
Hudson ... ..	...	England.	1610	Hudson Bay.	Nova Zembla in 1608.
Morosco ... ..	...	S. Russia.	...	...	Kamtchatka, 1690.
Behring, Vitus ...	...	Jutland.	1741	Behring Island.	Coast of Kamtchatka and Behring Strait, 1728.
Burckhardt, J. L.	1784	Lausanne.	1817	Cairo.	Mecca and Sinai, 1814.
Parry, W. E. ...	1790	Bath.	1855	Ems.	Reached N. latitude 82° 45' north of Spitzbergen, 1827.
Huc, Abbé ... ..	1813	...	...	...	Tibet, 1845—46.
Burton, R. ...	1821	Tuam.	1890	Trieste.	Medina and Mecca, 1853.
Vambréy, Arminius	1832	Hungary.	...	...	Central Asia, Khiva, Bokhara, Samarkand, 1862—64.
Garnier, Francis ...	...	France.	...	...	Eastern Peninsula, explored the course of the Mekong River, returning by the Yang-tse-kiang, 1866—68.
Nordenskiöld ...	...	...	...	...	First who passed north of Asia; N.E. Passage, 1878—79.



## NORTH AMERICA.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Gunbiörn ... ..	A.D.	Norway.	A.D.	...	South-East Greenland, 890.
Lief ... ..	...	Iceland.	...	...	Labrador, Newfoundland, and Nova Scotia, 1000.
Cabot, Sebastian ...	1477	Bristol.	about 1557	...	Newfoundland, 1497, and Hudson Strait, 1517.
Cortez ... ..	1485	Medellin (Estremadura).	1554	near Seville.	Interior of Mexico and the Californian peninsula, 1519—36.
Cartier, J. ... ..	1494	St. Malo.	1555	...	Gulf of St. Lawrence, and river to Montreal, 1534—35.
Ulloa, F. de ... ..	...	Merida (Estremadura).	1540	...	West coast of Mexico, and Gulf of California, 1539.
Frobisher, M. ... ..	1536	near Doncaster.	1594	off Brest.	First Englishman who attempted to discover a North-West Passage, 1576—78.
Drake, Francis ... ..	1545	near Tavistock.	1595	Nombre de Dios.	West coast of North America—"New Albion"—north latitude, 35° to 48°; explored, 1578.
Davis ... ..	1550	near Dartmouth.	1605	off Malacca.	Davis Strait and west coast of Greenland, 1585—87.
Hudson ... ..	...	England.	1610	Hudson Bay.	Hudson River, 1609; coast of Labrador and Hudson Bay, 1610.
Baffin, Wm. ... ..	1584	London.	1622	near Ormuz.	Baffin Bay, 1616.
Hearne, Th. ... ..	1742	London.	1792	...	Traced Coppermine River to Arctic Ocean, 1769—71.
Mackenzie, Alex. ...	1755	Inverness.	1820	Dalhousie.	Mackenzie River, 1789—The first to cross the North American continent.
Vancouver, G. ... ..	1750	...	1798	near London.	Vancouver's Island, 1792—Explored and surveyed 3,000 miles of coast, latitude 30°—60°, 1790—95.
Beechey, F. W. ... ..	1796	London.	1856	London.	North-West passage, Behring Strait to Point Barrow, 1825—28.
Parry, W. E. ... ..	1790	Bath.	1855	Ems.	North-West Passage—Lancaster Sound to Melville Island. Magnetic Pole, 1827—29.
Ross, John ... ..	1777	Wigtonshire.	1856	London.	Boothia—North point of North American continent, 1829—33.
Franklin, J. ... ..	1786	Spilsby.	1847	N. Canada.	Established the existence of a North-West Passage by joining the tracks of previous navigators, 1847.
McClure... ..	1807	Wexford.	1873	Portsmouth.	First who went through North-West Passage, 1850—54.
Fremont, J. C. ... ..	1813	Savannah, Ga.	1890	New York.	Rocky Mountains, Salt Lake, Oregon, and California, 1842.
Greely, A. W. ... ..	1844	Newburyport (Mass.).	...	...	Reached (on coast of Greenland) the highest latitude ever attained, 83° 24', 1882.

## SOUTH AMERICA.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Columbus, C. ... ..	A.D. about 1445	Genoa.	A.D. 1506	Valladolid.	Discovery of America; Cuba and Hispaniola, 1492; Caribbean Islands and Jamaica, 1493—94; Trinidad and mouth of Orinoco, 1498.
Pinzon, V. Y. ... ..	1460	Palos.	1524	Palos.	North coast of Brazil and the mouth of the Amazon, 1500.
Cabral, P. A. ... ..	...	Portugal.	1526	...	Brazil—Porto Seguro, 1500.
Vespucci, A. ... ..	1451	Florence.	1512	Seville.	Mainland of America; coast of Brazil, 1501 and 1503.
Balboa, V. N. ... ..	1475	near Badajos.	1517	Darien.	Discovered Pacific Ocean; Gulf of Panama, 1513.
Magellan, F. ... ..	1470	Oporto.	1521	Philippines.	Straits of Magellan, 1519—First to sail on the Pacific Ocean, 1520—21.
Pizarro ... ..	1476	Truxillo.	1541	Lima.	Coast of Peru, 1526; interior of Peru, 1529—38.
Almagro ... ..	1463	...	1538	...	Chili, 1535.
Orellana, Fr. ... ..	1500	Truxillo.	1549	Guiana.	Ecuador and the course of the Amazon, 1540.
Raleigh, W. ... ..	1552	Budleigh.	1618	London.	Guiana, 1596 and 1617.
Lemaire, J. ... ..	1565	Holland.	1616	...	Cape Horn, 1616.
Humboldt, Alex. v. ...	1769	Berlin.	1859	Berlin.	Equatorial regions of South America, 1799—1804.

## GEOLOGY, MINERALOGY, AND METALLURGY.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Agricola, Geo. ... ..	A.D. 1490	Glauchau (Saxony).	A.D. 1555	Chemnitz.	"De Re Metallica." First German mineralogist.
Biringuccio, V. ... ..	...	Sienna.	...	...	"Pyrotechnology" (melting and casting metals), about 1550.
Lister, Martin ... ..	1638	Radcliffe (Bucks).	1712	...	First geological map.
Bergmann, T. O. ... ..	1735	W. Goth- land.	1784	E. Goth- land.	Analysed very many minerals. Steel, a compound of iron and carbon, 1781.
Hutton, James ... ..	1726	Edinburgh.	1797	...	Vulcanist or Plutonian Theory.
Saussure, H. B. de ...	1740	Geneva.	1799	...	Founder of geology.
Cort, H. T. ... ..	1740	Lancaster.	1800	London.	Iron puddled and rolled, about 1781.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Dolomieu ... ..	A.D. 1750	Malta.	A.D. 1801	Dauphiné.	Dolomites.
Charpentier, J. F. ... ..	1738	Dresden.	1805	...	Geology of Saxony and the Riesengebirge. Scientific Mining.
Werner, A. G. ... ..	1750	near Görlitz.	1817	Dresden.	Neptunian Theory (formation of the earth's crust by water). Accurate description of minerals.
Haüy, R. J. ... ..	1743	St. Juste (Picardy).	1822	...	Classification of crystals by combined results of chemical analysis and physical characteristics.
Breislak, Scipio ... ..	1748	Rome.	1826	Turin.	Geology of Italy.
Hassenfratz ... ..	1755	Paris.	1827	Paris.	"Siderotechnie" (casting iron and steel).
Wollaston ... ..	1766	London.	1828	...	Obtained platinum in malleable form—finest platinum wire. Reflecting goniometer.
Cuvier ... ..	1769	Mont-beliard.	1832	Paris.	"Ossements fossiles des Quadrupèdes," 1821—24.
Smith, W. ... ..	1769	near Chipping Norton.	1839	Northampton.	Geology of England—Map 1815—25. "Strata identified by Organised Fossils."
Mohs, Fr... ..	1774	Gernrode (Hartz).	1839	Agordo (near Belluno).	Classification of Minerals.
Brongniart, Alex. ... ..	1770	Paris.	1847	...	Tertiary Strata; environs of Paris, Apennines, and Alps. Northern Drift.
Berzelius ... ..	1779	Ostgothland.	1848	Stockholm.	"Use of the Blowpipe in Mineralogy," 1837.
Leonhard, K. C. ... ..	1779	near Hanau.	...	...	Popular Systematic Geology. Topographic Mineralogy.
Weiss, C. S. ... ..	1780	Leipzig.	...	...	Natural classification of crystalline forms.
Beudant, F. S. ... ..	1787	Paris.	1852	...	"Mineralogy and Geology of Hungary."
Mantell, Gideon ... ..	1790	Lewes.	1852	...	"Medals of Creation"—Saurians of the Weald.
Buch, L. von ... ..	1777	Brandenburg.	1853	Berlin.	Germany, Scandinavia, Britain, France, Italy, and the Canaries—Large geological maps.
Jameson, Robert ... ..	1773	Leith.	1853	Edinburgh.	Mineralogy of Scotland.
Breithaupt, J. A. F. ... ..	1791	near Saalfeld.	...	...	"Complete Handbook of Mineralogy," 1836—41.
Forbes, Edwd. ... ..	1815	Douglas.	1854	...	Geological Museum. Palæontological Map of Great Britain.
De la Beche, H. T. ... ..	1796	London.	1855	...	"Geological Manual," 1830. Geological Maps on Ordnance Survey.
Buckland, Wm. ... ..	1784	Axminster.	1856	...	Bibliography of geology.
Miller, Hugh ... ..	1802	Cromarty.	1856	...	Ganoid fishes. Old Red Sandstone.
Humboldt ... ..	1769	Berlin.	1859	Berlin.	Geology of Spanish America and Asiatic Russia.
Neilson, J. B. ... ..	1792	...	1865	...	Hot-air blast, 1828.
Murchison ... ..	1792	near Beaulieu.	1871	London.	Silurian Rocks.
Sedgwick, Adam ... ..	1785	Dent (Yorks.).	1873	Cambridge.	Collections in Woodwardian Museum, Cambridge.
Agassiz, L. J. R... ..	1807	Canton de Vaud.	1873	Cambridge (Mass.).	Fossil Fishes. Northern Drift and Glacial period.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Lyell, Chas. ... ..	A.D. 1797	near Forfar.	A.D. 1875	London.	Evolution of Earth's Surface in Geologic Time.
Scrope, G. P. ... ..	1797	...	1876	Chobham (Surrey).	Theory of Volcanoes. "Geology and Extinct Volcanoes of Central France," 1858.
Deville, H. St. Claire ...	1818	St. Thomas (W. Indies).	1876	Paris.	Improved process for Aluminium. "De l'Aluminium," 1859.
Naumann, K. F. ... ..	1798	Dresden.	...	...	Mineralogy and Crystallography.
Beaumont, E. de ... ..	1798	Calvados.	...	...	Geology of France, 1833—38.
Siemens, C. Wm. ... ..	1823	Lenthe.	1883	London.	"Regenerative Furnace"—two chambers containing firebricks are used alternately to store outgoing heat, and to heat the indraught, 1857. Gas furnace, 1862.
Percy, Jno. ... ..	1817	Notting- ham.	1889	London.	"Metallurgy;" Aluminium bronze, 1861.
Owen, Richd. ... ..	1804	Lancaster.	...	...	Vertebrate Fossils.
Bessemer, Hy. ... ..	1813	Herts.	...	...	Steel made direct from the smelting furnace in his "converter," 1856.

### III.—Biological.

## BOTANY.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Aristotle ... ..	B.C. 384	Stagira.	B.C. 322	Chalcis (Euboea).	Founder of botany.
Theophrastus ... ..	about 371 A.D.	Lesbos.	about 286 A.D.	...	History of plants.
Pliny ... ..	23	Verona.	79	Mt. Vesu- vius.	Cultivation and uses of trees, shrubs, and herbs.
Dioscorides ... ..	...	Anazarba (Cilicia).	...	...	Greek herbal; for sixteen hundred years sole authority on pharmaceutical botany. About 100 A.D.
Bock, Jerome ... ..	1498	near Zwei- brücken.	1554	near Zwei- brücken.	German Flora.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Gesner, Conrad ... ..	A.D. 1516	Zurich.	A.D. 1565	Zurich.	"Opera Botanica." He classified plants by seed and flower.
Turner, W. ... ..	...	Morpeth.	1568	London.	Earliest English herbal.
Tusser, Th. ... ..	about 1520	near Witham.	1580	London.	"Five Hundred Points of Husbandry," 1562.
Camerarius, J. ... ..	1534	Nurem- burg.	1598	Nurem- burg.	Fifteen hundred woodcuts of plants.
Cæsalpinus ... ..	1519	Arezzo.	1603	...	First arrangement of plants by internal structure.
Aldrovandus ... ..	1522	Bologna.	1605	...	First botanic garden.
Gerarde, J. ... ..	1545	Nantwich.	1607	...	"Physic Garden," 1567.
Tradescant, J. ... ..	...	Holland.	1638	...	Collections in the Ashmolean Museum.
Ray ... ..	1628	near Braintree (Essex).	1705	near Braintree.	Synopsis of British plants.
Evelyn ... ..	1620	Wotton (Surrey).	1706	Wotton.	"Sylva"—discourse on forest trees.
Tournefort ... ..	1656	Aix (Provence).	1708	Paris.	Classification by petals and fruit.
Grew, N. ... ..	1628	Coventry.	1711	...	"The Anatomy of Plants."
Kaempfer, E. ... ..	1651	Lemgo (Detmold).	1715	Lemgo.	Japanese plants.
Tull, Jethro ... ..	1674	Basildon (Berks.).	1740	...	Wrote on agriculture, and used machinery, 1701.
Linnaeus ... ..	1707	Råshult (Småland)	1778	Upsala.	Linnean system. "Philosophia Botanica;"
Solander ... ..	1736	Norrland (Sweden).	1782	...	"Species Plantarum."
Adanson ... ..	1727	Aix (Provence).	1806	Paris.	Cook's Voyage.
Banks, Joseph ... ..	1743	London.	1820	London.	"Les Familles des Plantes."
Sowerby, J. ... ..	1757	London.	1822	...	Cook's Voyage.
Raffles, Stamford ... ..	1781	off Jamaica.	1826	near Edgware.	English Botany.
Lamarck ... ..	1744	near Amiens.	1829	Paris.	Rafflesia—parasitic flower, a yard in diameter, cup holds twelve pints, weighs fifteen pounds.
Goethe ... ..	1749	Frankfort- on-Main.	1832	Weimar.	The analytic or branching classification.
Desfontaines, R. L. ... ..	1759	near Rennes.	1833	...	Appendages of the axis.
Jussieu, A. L. ... ..	1748	Lyons.	1836	Paris.	Defined exogens and endogens.
De Candolle ... ..	1778	Geneva.	1841	...	"Genera Plantarum secundum Ordinem Naturalem Disposita."
Loudon, J. C. ... ..	1783	near Glasgow.	1843	...	"Prodromus Systematis Naturalis Regni Vegetabilis," 1818—76.
Nees von Esenbeck ... ..	1776	...	1858	...	"Encyclopædia of Plants;" "Arboretum Britannicum."
Siebold, Phil. ... ..	1796	Wurzburg.	...	...	One of the earliest and greatest labourers in descriptive botany.
Brown, Robert ... ..	1773	Montrose.	1858	London.	Japanese flora.
					In Flinders' voyage (1801—05) he brought from Australia and Java four thousand plants, mostly new to science.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Bonpland ... ..	A.D. 1773	La Rochelle.	A.D. 1858	Monte Video.	Companion of Humboldt's travels; brought six thousand new species to Europe.
Hooker, W. J. ... ..	1785	Norwich.	1865	Kew.	"British Flora;" "Flora Scotica;" "Exotic Flora."
Lindley, J. ... ..	1799	near Norwich.	1865	near London.	"Vegetable Kingdom;" "Fossil Flora of Britain."
Martius ... ..	1794	Erlangen.	1868	Munich.	Flora of Brazil.
Ehrenberg ... ..	1795	Delitzsch.	1876	...	Microscopic Fungi.
Berkeley, M. J. ... ..	1802	near Oundle.	1889	Sibbertoft (Northants).	Algæ; Fungi; Mosses.
Schomburgk, R. H. ... ..	1804	Freyburg (near Leipsic).	1865	...	Discovered the Victoria Regia.
Hooker, J. Dalton ... ..	1817	Halesworth (Suffolk).	...	...	Indian and Antarctic flora.

## ZOOLOGY.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Aristotle ... ..	B.C. 384	Stagira.	B.C. 322	Chalcis (Eubœa).	First classification of animals.
Belon ... ..	A.D. about 1518	near Mayenne.	A.D. 1564	near Paris.	Birds and fishes.
Salviani ... ..	1514	Citta di Castello.	1572	Rome.	Ichthyology.
Willughby, F. ... ..	1635	...	1672	...	Ornithology, 3 books (translated by Ray); Fishes, 4 books.
Swammerdam ... ..	1637	Amsterdam.	about 1680	Amsterdam.	Entomology.
Ray ... ..	1628	near Braintree (Essex).	1705	near Braintree.	Founder of modern zoology.
Merian, Maria S. ... ..	1647	Frankfort.	1717	Amsterdam.	Entomology of Surinam or Dutch Guiana.
Réaumur... ..	1683	La Rochelle.	1757	...	Insects.
Linnæus ... ..	1707	Råshult (Småland).	1778	Upsala.	First modern classification (355 genera); "Systema Naturæ."

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Trembley, A. ... ..	A.D. 1700	Geneva.	A.D. 1784	...	Polypes and worms ; reproduction by division and budding.
Buffon, G. L. F. ...	1707	Montbard (Burgundy). near	1788	Paris.	"Histoire Naturelle."
Pennant ... ..	1726	St. Asaph.	1798	near St. Asaph.	British zoology ; birds and quadrupeds.
Wilson, Alex. ... ..	1766	Paisley.	1813	...	American ornithology.
Le Vaillant ... ..	1753	Surinam.	1824	near Sézanne (Marne). Epinay.	"Birds of Africa ;" "Rare birds of the Indies ;" "Giraffe."
Lacépède, De ... ..	1756	Agen.	1825	Paris.	Reptiles and fishes.
Lamarck ... ..	1744	near Amiens.	1829	Paris.	Invertebrata ; "Philosophy of Zoology," 1809. In his classification are nearly 4,000 genera.
Huber, Francis ... ..	1750	Geneva.	1831	Lausanne.	Bees.
Goethe ... ..	1749	Frankfort-on-Main.	1832	Weimar.	Relation of species.
Cuvier ... ..	1769	Montbéliard.	1832	Paris.	Classification ; "Règne Animal," 1817.
Latreille, P. A. ... ..	1762	Brives (Corrèze).	1833	Paris.	Classification of insects.
Geoffroy St.-Hilaire, Etienne	1772	Etampes.	1844	...	Founder of philosophical comparative anatomy.
Kirby, Wm. ... ..	1759	near Ipswich.	1850	Barham (Suffolk).	"Introduction to Entomology," 1815—26.
Audubon, J. J. ... ..	1780	near New Orleans.	1851	New York.	"Birds of America ;" "Quadrupeds of America."
Yarrell ... ..	1784	London.	1856	Yarmouth.	"British Fishes" and "British Birds."
Geoffroy St.-Hilaire, Isidore	1805	Paris.	1861	...	Acclimatisation.
Agassiz ... ..	1807	Canton de Vaud.	1873	Cambridge (Mass.).	Recent and fossil fishes ; molluscs and echinoderms ; Sargasso Sea.
Gould, Jno. ... ..	1804	Lyme Regis.	1881	London.	Monographs on the birds of Europe, Asia, and Australasia.
Darwin, C. ... ..	1809	Shrewsbury.	1882	Dover.	"Origin of Species."
Siebold, Ph. ... ..	1796	Wurzburg.	...	...	Japanese fauna ; Parthenogenesis, 1856.
Owen, Richard ... ..	1804	Lancaster.	...	...	Osteology.
Wallace, A. R. ... ..	1822	Usk.	...	...	"Darwinism," 1889.
Lubbock, J. ... ..	1834	London.	...	...	Senses and intelligence of insects.

## BIOLOGY AND MEDICINE.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Hippocrates ... ..	B.C. 460	Cos.	B.C. 377	Larissa.	Father of scientific medicine; "Prognostics," "Aphorisms," "Epidemics," "Wounds of the Head."
Herophilus ... ..	...	Chalcedon.	...	...	Greatest anatomist of antiquity; studied the pulse. About 300 B.C.
Erasistratus ... ..	...	Zea.	257 A.D.	...	Student of human anatomy. About 300 B.C.
Rhiwallon ... ..	...	...	...	...	Earliest Welsh (British) medical writer, 12 A.D.
Galen ... ..	A.D. 131	Pergamos.	200	Rome.	Anatomy and Medicine—a system unimproved and unquestioned for thirteen hundred years.
Celsus, A. C. ... ..	...	...	...	...	200 A.D. Contains the views and experience of the Alexandrian School, whose works were burned by Omar, 640 A.D.
Ægineia, Paulus ... ..	about 600	Ægina.	630	...	Full summary of the medical science of his time.
Rhazes ... ..	852	Khorasan.	932	...	First described small-pox.
Avicenna (Ibn Sina) ... ..	980	Bokhara.	1037	Persia.	"Canon" of medical science, an authority for some centuries.
Averroes (Ibn Roschid) ... ..	1149	Cordova.	1198	Morocco.	The most noted of the Arabian philosophers.
Linacre ... ..	1460	Canterbury.	1524	...	Founded London College of Physicians.
Paracelsus ... ..	1493	Einsiedeln.	1541	Salzburg.	Audacious quack—but he based treatment on chemistry.
Servetus, M. ... ..	1509	near Saragossa.	1553	Geneva.	Circulation of lungs.
Vesalius, A. ... ..	1514	Brussels.	1564	Zante.	"On Structure of Human Body," the plates by Titian.
Paré, Ambrose ... ..	1509	Laval.	1590	Paris.	Father of French surgery.
Tagliacozzi, G. ... ..	1546	Bologna.	1599	...	Grafting of human skin; he made new noses from skin of upper arm.
Fabricius... ..	1537	Acqua-pendente.	1619	Padua.	"Physiological and Anatomical Works."
Harvey, Wm. ... ..	1578	Folkestone.	1657	Hempstead (Essex).	Circulation of blood.
Sydenham, Th. ... ..	1624	Winford Eagle (Dorset).	1689	London.	Use of Peruvian bark (quinine).
Boerhaave ... ..	1668	Leyden.	1738	...	"Institutiones Medice;" "Aphorisms."
Hales, S. ... ..	1677	near Canterbury.	1761	Teddington.	Vegetable statics.



	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Montagu, Mary W. ...	A.D. 1690	Thoresby.	A.D. 1762	London.	Introduced inoculation for small-pox, 1716.
Morgagni ...	1682	Forli.	1771	Padua.	Founder of pathological anatomy.
Haller, Albert ...	1708	Berne.	1777	...	Effects of stimuli on nerves; "Elementa Physiologiæ."
Cullen, W. ...	1712	Lanark.	1790	...	"Nosology," a classification of diseases.
Hunter, J. ...	1728	near Blantyre.	1793	London.	Comparative structure of the same organ in different animals.
Bichat ...	1771	Thoirette (Ain).	1802	Paris.	Systematic trial of various medicines.
Jenner, E. ...	1749	Berkeley.	1823	Berkeley.	Discoverer of vaccination, 1796.
Laennec ...	1781	Quimper.	1826	Quimper.	Inventor of the stethoscope.
Scarpa ...	1747	near Treviso.	1832	Pavia.	Nerves of hearing, of smell, and of the heart.
Blumenbach ...	1752	Gotha.	1840	Göttingen.	First German comparative anatomist; "Handbook," 1804.
Meckel, J. F. ...	1781	Halle.	1833	Halle.	Greatest German comparative anatomist.
Treviranus, G. R. ...	1776	Bremen.	1837	Bremen.	"Biologie oder Philosophie der Lebenden Natur," 1802—05.
Bell, C. ...	1774	Edinburgh.	1842	near Worcester.	Nerves are of two kinds—motor and sentient.
Larrey ...	1768	near Bigorre.	1842	Lyons.	Military surgery.
Orfila ...	1787	Port Mahon (Minorca).	1853	Paris.	Founder of toxicology.
Magendie, F. ...	1783	Bordeaux.	1855	...	Local action of poisons.
Müller, John ...	1801	Coblentz.	1858	...	Comparative physiology of vision.
Simpson, J. Y. ...	1811	Bathgate.	1870	Edinburgh.	Use of chloroform as an anæsthetic, 1847.
Schwann ...	1810	Neuss.	1882	Cologne.	Animal and vegetable cells.
Darwin, C. ...	1809	Shrewsbury.	1882	Down (Kent).	Creation by evolution.
Schultz, K. H. ...	1798	Alt Ruppin (near Berlin).	...	...	Circulation of the latex in plants—Relation of internal structure to classification.
Spencer, Herbert ...	1820	Derby.	...	...	"Principles of Biology."
Pasteur, Louis ...	1822	Dôle.	...	...	Vaccinations for rabies, chicken cholera, and wool-sorters' disease.
Huxley, T. H. ...	1825	Ealing.	...	...	"Man's Place in Nature;" "Elementary Biology."
Haughton, S. ...	...	...	...	...	Animal Mechanics.
Raymond, Du Bois ...	1818	Berlin.	...	...	Nerve-force travels about 100 feet per second.

## IV.—Physical.

## MECHANICS.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Archimedes ... ..	B.C. 287	Syracuse.	B.C. 212	Syracuse.	Block and tackle, and endless screw ; planetarium.
Pascal, B. ... ..	A.D. 1623	Clermont (Auvergne).	A.D. 1662	...	First calculating machine.
Menzies, Michael ... ..	...	...	...	...	Thrashing machine, Edinburgh, 1732.
Vaucanson, J. ... ..	1709	Grenoble.	1782	Paris.	Duck and flute player ; "Le Mécanisme du Flûteur Automate," Paris, 1738.
Droz, J. ... ..	1721	Chaux de Fonds.	1790	Bienne.	Writing-boy (automaton).
Droz, H. L. J. ... ..	1752	Chaux de Fonds.	1791	Naples.	Pianoforte-player (automaton).
Kempelen, W. ... ..	1734	Presburg.	1804	Vienna.	Chess-player and speaking figure ; "Mech- anismus der Menschlichen Sprache," Vienna, 1791.
Bramah ... ..	1749	near Barnsley.	1814	London.	Applied principle of permutations to tumbler locks.
Bell, Patrick ... ..	1799	near Dundee.	1869	...	Reaping machine, 1826.
Prony, G. ... ..	1755	near Lyons.	1839	...	Dynamometer (brake).
Lenoir ... ..	...	...	...	...	Gas engine, 1861.
Babbage, Chas. ... ..	1791	near Teign- mouth.	1871	London.	Calculating machine, or "Difference Engine."
Whitworth ... ..	1803	Stockport.	1887	Monte Carlo.	Tools of precision ; finest possible measure- ments.
Nasmyth, J. ... ..	1808	Edinburgh.	1890	London.	Steam hammer, 1838.

## HOROLOGY.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Ctesibius ... ..	B.C. ...	...	B.C. ...	...	Added toothed wheels and index to water- clock. 145 B.C.
Gerbert (Sylvester II.)...	A.D. 920	near Aurillac.	A.D. 1003	...	Escapement, 996, Magdeburg.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Hele, P. ... ..	A.D. ...	Nuremberg.	A.D. 1540	...	Balance-wheel and hair-spring ; mainspring.
Galileo ... ..	1564	Pisa.	1642	Florence.	Pendulum, a measure of time.
Barlow, Edward ...	1636	Warrington.	1716	...	Repeater clocks and watches, 1676.
Graham, Geo. ... ..	1673	near Carlisle.	1751	London.	First compensation pendulum (mercurial), 1722.
Harrison ... ..	1693	near Pontefract.	1776	London.	Gridiron pendulum, 1726 ; chronometers, 1764.
Maelzel ... ..	1776	Ratisbon.	1838	...	Metronome, 1816.

## PRINTING.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Coster, L. J. ... ..	A.D. 1370	Haarlem.	A. D. 1439	...	Block printing (single page), thick ink, 1430.
Fust, Jno. ... ..	...	Mentz (?)	about 1466	Paris.	
{ Gutenberg ... ..	about 1397	Mentz.	1468	...	{ Printing with movable types ; Gothic letters cut ; Mazarine Bible, 1455 ; cast letters, 1459.
	Schoeffer, Peter ...	near Darmstadt.	about 1502	...	
Caxton, Wm. ... ..	1412	Kent.	1491	...	Introduced printing into England, 1470.
Finiguerra, T. ... ..	...	Florence.	1475	...	Copper-plate printing, 1452.
Ged, Wm. ... ..	1690	Edinburgh.	1749	...	Stereotype, 1725.
Senefelder, A. ... ..	1771	Prague.	1834	Munich.	Lithography, about 1796.

## SPINNING, WEAVING, &amp;c.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Lee, Wm. ... ..	A.D. about 1563	Woodborough (Notts.).	A. D. 1610	Paris.	Stocking frame, 1589.
Kay, Jno. ... ..	...	Bury (?)	...	...	Fly-shuttle, 1738.
Hargreaves, Jas. ...	...	...	1778	...	Spinning jenny ; carding machine, 1767.
Arkwright, R. ... ..	1732	Preston.	1792	...	Spinning water-frame, 1769 ; water-power, 1771.
Crompton, Saml. ...	1753	near Bolton.	1827	Bolton.	Spinning-mule, 1774—79.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Cartwright, Edmd. ...	A.D. 1743	Marnham (Notts).	A.D. 1823	Hastings.	Steam-power loom, 1785.
Whitney, E. ...	1765	West-borough (Mass.).	1825	Newhaven (Conn.).	Cotton gin (saw), 1793.
Jacquard, J. M. ...	1752	Lyons.	1834	near Lyons.	Pattern weaving, 1801.
Howe, Elias ...	1819	Spencer (Mass.).	1867	Bridgeport (Conn.).	Sewing machine, 1845.

## STEAM ENGINE.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Hero ...	B.C. ...	Alexandria.	B.C. ...	...	Eolipile and solar engine. About 200 B.C.
Branca ...	A.D. ...	...	A.D. ...	...	Steam on pallets of wheel, 1629.
Worcester, Marq. of ...	1601	...	1667	...	By alternate pressure and condensation of steam, water is forced and sucked up; there is no piston. 1665.
Papin, D. ...	1647	Blois.	1710	...	Four-way cock; safety-valve; high-pressure steam and piston, 1699.
Newcomen ...	...	Dartmouth.	1729	London.	Cold injection to cylinder; first self-acting engine, 1712.
Watt, J. ...	1736	Greenock.	1819	near Birmingham.	Double action; separate condenser, 1765; parallel motion; centrifugal regulator; indicator; expansive working, 1778; boiler-gauges and self-acting feeders.
Hornblower, Jonathan ...	...	...	...	...	Compound engine; high and low pressure cylinders, 1781.
Murdoch, Wm. ...	...	...	1839	...	D slide valve; oscillating cylinder, 1785.
Fitch, Jno. ...	1743	Connecticut.	1798	Kentucky.	Steamboat screw, 1796.
Symington, Wm. ...	...	...	...	...	First practical steamboat, <i>Charlotte Dundas</i> , 1802.
Fulton, Robert ...	1765	Pennsylvania.	1815	New York.	Steamboat a commercial success, 1803.
Trevithick ...	1771	Redruth.	1833	...	Flue boiler; high pressure; smooth rail, 1804.
Bell, Henry ...	1767	Torphichen (Linlithgow).	1830	Helensburgh.	First passenger vessel in Europe, <i>Comet</i> , 1812.
Stephenson, G. ...	1781	Wylam (near Newcastle).	1848	Tapton.	Multitubular boiler; made locomotive a practical success; "Rocket," 29 miles an hour; steam blast; reversing gear, 1833.
Stevens, R. L. ...	1787	...	1856	Hoboken.	Feathering paddle-wheel.

## CIVIL ENGINEERS.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Sostratus... ..	B. C.	Cnidus.	B. C.	...	Pharos (at Alexandria); first lighthouse, 283 B. C.
Leonardo da Vinci ...	A. D. 1452	near Florence.	1519	near Amboise.	Canal lock.
Martinez, Enrico ...	1570	Ayamonte (Iluelva).	1632	Mexico.	Greatest cutting—6 miles long, more than 200 ft. deep, draining the city of Mexico, 1608.
Myddleton, H. ...	1555	Denbigh.	1631	London.	London water supply; New River, 1613.
Vermuyden, C. ...	...	Zeeland.	...	...	Draining the Fens, 1621—52.
Riquet, P. P. de ...	1604	Beziers.	1680	...	Languedoc canal (Narbonne to Bordeaux), completed 1681.
Brindley, Jas. ...	1716	near Buxton.	1772	...	Bridgewater, and Grand Trunk (Liverpool and Hull) canals.
Smeaton, J. ...	1724	near Leeds.	1792	near Leeds.	Eddystone lighthouse ("oak trunk" foundation), lasted from 1755 to 1882; first used diving-bell for submarine foundations, Ramsgate harbour, 1779.
Rennie, J. ...	1761	Phantassie.	1821	London.	Plymouth breakwater; Bell Rock lighthouse.
Telford, Th. ...	1757	Eskdale (Dumfriesshire).	1834	Westminster.	Conway and Menai suspension bridges, 1818—25; twelve hundred bridges in Scotland; Caledonian Canal.
Macadam, J. ...	1756	Kirkcudbright.	1836	Moffat.	Roads—convex, well drained, and coated with 6-oz. stones.
Stephenson, Geo. ...	1781	Wylam (Newcastle).	1848	near Chesterfield.	Laid and worked the first railways—Stockton and Darlington, 1825; Manchester and Liverpool, 1830.
Stephenson, Robt. ...	1803	Willington Quay (Newcastle).	1859	London.	Tubular bridges—Menai (460 ft. spans), 1846—50; Nile, and St. Lawrence.
Siebe, A. ...	1788	...	1872	...	Diving helmet—first used, 1838.
Allen, Horatio ...	1802	...	...	...	First American locomotive railway—Boston and Worcester, 35 miles, 1835.
Lesseps, Ferd. de ...	1805	Versailles.	...	...	Suez Canal, 1867.
Fowler, John ...	1817	...	...	...	Forth Bridge—greatest height, strength, and span (1,710 feet) combined; cantilever, 1889; Metropolitan Railway, 1863.
Bazalgette, J. W. ...	1819	Enfield.	...	...	London main drainage, 1865.
Roebling, J. A. ...	1806	Mühlhausen.	1869	Brooklyn.	Suspension bridges for Niagara Railway, 1855—wire rope, span 821 feet; and Brooklyn, 1868—83, span 1,595 feet, light rail and road traffic.
Eads, J. B. ...	1820	Lawrenceburgh (Ind.).	1887	New Providence (Bahamas).	Mississippi bridge, St. Louis, deepest subaqueous foundation, 107 feet below mean level, 1874.
Eiffel, Gustave. ...	1843	Dijon.	...	...	Eiffel Tower, 1889 (984 ft. high); Empress bridge over the Sutlej, Punjab, 1879 (6,000 ft. long).

## HYDRAULICS AND PNEUMATICS.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Archimedes ... ..	B.C. 287	Syracuse.	B.C. 212	Syracuse.	Method of ascertaining specific gravity ; pumping screw.
Ctesibius... ..	...	...	...	...	Lift pump, and hydraulic organ. About 220 B.C.
Hero ... ..	...	Alexandria.	...	...	Air fountain, and forcing pump. About 200 B.C.
Drebbel, Cornelius ... ..	A.D. 1572	Alkmaar.	A.D. 1634	London.	First submarine boat, 1620.
Torricelli... ..	1608	near Faenza.	1647	...	Mercurial barometer, 1643.
Pascal, B. ... ..	1623	Clemon.	1662	...	Fluid pressure equal in all directions.
Mariotte ... ..	...	Dijon.	1684	Paris.	Law of pressure and volume of gases, 1679.
Otto von Guericke ... ..	1602	Magde- burg.	1686	Hamburg.	Air pump, 1650 ; Magdeburg hemispheres.
Boyle, Robt. ... ..	1627	Lismore (Water- ford).	1691	London.	Law of pressure and volume of gases, 1662.
Phipps, Wm. ... ..	1651	Maine.	1695	London.	Diving bell, 1632.
Bernoulli, D. ... ..	1700	Gröningen.	1782	...	"Hydrodynamique."
Black, Jos. ... ..	1728	Bordeaux.	1799	...	Hydrogen balloon.
Montgolfier, Jos. ... ..	1740	Annonay (Ardèche).	1810	...	Hydraulic ram ; fire balloon.
Bramah, Jos. ... ..	1749	near Barnsley.	1814	London.	Hydraulic press, 1785.
Northmore ... ..	...	...	...	...	First liquefaction of a gas—chlorine, 1805.
Berthollet, C. L... ..	1748	Tallore (Savoy).	1822	Paris.	Laws of mixture of gases.
Wollaston, F. J. ... ..	...	...	...	...	Hypsometer, determining altitude by boil- ing-point, 1817.
Dutrochet, R. ... ..	1776	...	1847	Paris.	Endosmose and exosmose.
Gay-Lussac ... ..	1788	near Limoges.	1850	Paris.	Laws of expansion of gases.
Vidi ... ..	...	...	1866	...	Aneroid, 1848.
Faraday, M. ... ..	1794	Newing- ton.	1867	...	Liquefaction of gases, 1823.
Thilorier ... ..	...	...	...	...	Liquefied large quantities of carbonic acid, 1835.
Graham, Th. ... ..	1805	Glasgow.	1869	London.	Diffusion of liquids and gases ; occlusion of gases by platinum and iron.
Jordan, J. B. ... ..	1807	Bristol.	1890	...	Glycerine barometer, self-recording.
Armstrong, Wm. ... ..	1810	New- castle (?)	...	...	Hydraulic crane, 1846.
Bishop ... ..	...	...	...	...	Floating derrick, 1857.
Sprengel ... ..	...	...	...	...	Air-pump, converting space into Torricel- lian vacuum, 1863.
Andrews ... ..	...	...	...	...	Continuity of gaseous and liquid states.
Cailletet ... ..	...	...	...	...	Liquefaction of oxygen, 1877.
Pictet, R. ... ..	...	...	...	...	Liquefaction of hydrogen, 1877.

## ACOUSTICS.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
	A.D.		A.D.		
Corti ... ..	1475	Pavia.	1544	...	Tone receiver of inner ear.
Eustachius ... ..	...	near	1574	...	Middle ear (drum).
		Ancona (?)			
Gassendi, P. ... ..	1592	near	1655	Paris.	First determination of the velocity of sound.
		Digne.			
Hooke, R. ... ..	1635	Fresh-	1702	...	Musical pitch depends on number of vibra-
		water.			tions; tooth siren, 1681.
Sauveur ... ..	1653	La Flèche	1716	...	Number of vibrations belonging to different
		(Anjou).			notes.
Newton, I. ... ..	1642	Woolsthorpe.	1727	Kensing-	Velocity of sound depends on elasticity of
			ton.		gas.
Tartini ... ..	1692	Pirano	1770	...	Harmonics of the violin.
		(Istria).			
Bach, Sebastian...	1716	Bohemia.	1787	Vienna.	Scale of equal temperament.
Chladni ... ..	1756	Witten-	1827	Breslau.	Sand figures; notes of pipes with different
		burg.			gases.
Cagniard de Latour	1777	...	1859	...	Counted vibrations in sounds of different
					kinds by means of the puff siren, 1819.
Savart ... ..	...	...	...	...	Limits of perception of tone, 1836.
Wheatstone, Ch. ...	1802	Gloucester.	1878	Paris.	Electric transmission of vibration of tuning-
					forks to those of same note, 1859.
Tyndall, J. ... ..	1820	near	...	...	Transmission of sound to great distances,
		Carlow.			1873—77.
Helmholtz ... ..	1821	Potsdam.	...	...	Overtones and harmonics of voice.
Edison, Th. A. ...	1847	Milan	...	...	Phonograph, 1877—improved, 1888.
		(Ohio).			
Auerbach ... ..	...	...	...	...	Undertones, 1878.
Tainter, Sumner ...	...	...	...	...	Graphophone, with wax cylinder, 1882.

## CALORIC.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
	A.D.		A.D.		
Galileo ... ..	1564	Pisa.	1642	Florence.	First thermometer, 1597.
Fahrenheit ... ..	1686	Dantzic.	1736	Holland.	First thermometric scale, 1726.
Halley, Edmund ...	1656	London.	1742	Greenwich.	First mercurial thermometer.
Celsius, A. C. ...	1701	...	1744	Upsala.	The thermometric scale most generally
					used.
Black, Jos. ... ..	1728	Bordeaux.	1799	Edinburgh.	Latent heat of liquefaction.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Montgolfier, J. E. ...	A.D. 1745	Annonay (Ardèche).	A.D. 1799	...	Hot-air balloon, ascended 6,600 feet, 1783.
Rumford (B. Thompson)	1752	Concord (U.S.).	1814	near Paris.	Attempted to determine the relation of heat to mechanical force, and maintained it to be a form of motion.
Bréguet, A. L. ...	1747	Neuchâtel.	1823	...	Compensating balance wheel; metallic thermometer.
Carnot, L. ...	1753	Nolay (Burgundy).	1823	Magdeburg.	The greatest possible work an engine can perform is a function of the temperatures between which it works.
Wollaston, W. H. ...	1766	London.	1828	...	Cryophorus—freezing water by its own evaporation.
Davy, Humphry ...	1778	Penzance.	1829	Geneva.	Fused pieces of ice by mutual friction in a freezing temperature.
Leslie, J. ....	1766	Largo.	1832	Fife.	Differential thermometer.
Seebeck, Th. ...	...	Berlin (?)	...	...	Direct conversion of heat into electricity by the thermo-electric couple, 1822.
Nobili ...	...	...	...	...	Thermo-electric pile—bismuth and antimony.
Melloni ...	...	...	...	...	Researches on radiant heat by means of the thermo-multiplier.
Régnault, H. V. ...	1810	Aix-la-Chapelle.	1878	Paris.	Specific heats and tensions of vapour accurately determined.
Mayer, J. R. ...	1814	Marpach.	1878	...	First calculation of the mechanical equivalent of heat.
Maxwell, J. Clerk ...	1831	Edinburgh.	1879	Cambridge.	"Theory of Heat," 1871.
Siemens, C. Wm. ...	1823	Leithe.	1883	London.	Regenerative furnace—utilising out-going heat; self-regulating electric furnace.
Joule, J. P. ...	1818	Salford.	1889	Sa'e, near Manchester.	Experimental determination of mechanical equivalent of heat.
Ericsson ...	1803	Wermland (Sweden).	1889	...	Caloric or hot-air engine.
Tyndall, J. ...	1820	near Carlow.	...	...	"Heat a Mode of Motion."
Déville, St. Claire ...	1818	St. Thomas (W. Indies).	1876	Paris.	Furnace heat limited by dissociation.
Crookes, Wm. ...	1832	London.	...	...	Radiometer, 1873; otheoscope, 1877.



## CHEMISTRY.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Gebir ... ..	A.D. ...	Arabia.	A.D. 850	...	Founder of chemistry.
Albertus, Magnus ...	1193	Lauingen near Ulm.	1280	Cologne	The earliest European chemist ; accused of magic.
Bacon, Roger ... ..	1214	Ilchester.	1292	Oxford.	First gave the formula of an explosive—sulphur, nitre, and charcoal—in his treatise "On the Nullity of Magic."
Brandt ... ..	...	Ham-burg (?)	1692	...	Phosphorus, 1669.
Stahl, G. E. ... ..	1660	Anspach.	1734	...	Attempted to give chemistry the form of a science, but with the grave error of "Phlogiston."
Hales, S.... ...	1677	near Can-ter-bury.	1761	Tedding-ton.	Pneumatic chemistry begun ; methods of collecting gases.
Bergmann, T. O. ...	1735	W. Goth-land.	1784	E. Goth-land.	Oxalic acid ; carbonic acid shown to be an acid.
Scheele ... ..	1742	Stralsund.	1786	Köping (near Stock-holm).	Manganese, barium, molybdenum, and tungsten.
Black, Joseph ... ..	1728	Bordeaux.	1799	Edinburgh.	Magnesia ; discoverer of carbonic acid (fixed air) in limestone and mild alkalis, 1757.
Rutherford, Dan. ...	1749	Edinburgh.	1819	...	Identified nitrogen, 1772.
Priestley ... ..	1733	Fieldhead.	1804	Pennsyl-vania.	Oxygen, 1774 ; ammonia ; eudiometer.
Cavendish, H. ... ..	1731	Nice.	1810	London.	Composition of water, 1781.
Lavoisier... ..	1743	Paris.	1794	Paris.	Notation ; chemistry of oxygen ; "Traité élémentaire de Chimie," 1789.
Klaproth, M. H. ...	1743	Wernige- rode (Hartz Mts.).	1817	Berlin.	Uranium ; zirconium, 1789 ; cerium, 1803.
Berthollet, C. L. ...	1748	Talloire (Savoy).	1822	Paris.	Chlorine ; bleaching.
Wollaston. ... ..	1766	London.	1828	...	Palladium and rhodium ; platinum rendered malleable.
Davy, Humphry ...	1778	Penzance.	1829	Geneva.	Metals of the alkalis and the alkaline earths.
Chaptal, J. A. ... ..	1756	Nozaret (Lozère).	1832	Paris.	Application of chemistry to the arts, agri-culture, and manuf. cture.
Dulong ... ..	1785	...	1838	...	The specific heat of an atom of all simple bodies is the same.
Meissner ... ..	...	...	...	...	Blowpipe analysis.
Dalton ... ..	1766	Cumber-land.	1844	Man-chester.	Atomic theory, 1808.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Berzelius... ..	A.D. 1779	Ostgothland.	A.D. 1848	Stockholm.	Founder of modern chemistry.
Walker ... ..	...	Stockton-on-Tees (?)	...	...	Friction matches, 1829.
Döbereiner, J. W. ...	1780	Hof (Bavaria).	1849	...	Surface action of platinum; lamp, 1823; organic analysis by oxide of copper.
Gay, Lussac ... ..	1788	near Limoges.	1850	Paris.	Compounds of the alkalis, iodine, chlorine, and cyanogen.
Hare, Robt. ... ..	1781	Philadelphia.	1858	Philadelphia.	Oxy-hydrogen blowpipe, 1802.
Mitscherlich, E....	1794	Jever (Oldenburg).	1863	...	Isomerism and isomorphism.
Schrötter... ..	...	Vienna (?)	...	...	Amorphous phosphorus — non-poisonous, 1845.
Faraday, M. ... ..	1794	Newington (Surrey).	1867	Hampton Court.	"Chemical Manipulation."
Schönbein, C. F. ...	1797(?)	Basle	1868	...	Gun-cotton, 1846; ozone.
Sobrero, A. ... ..	...	...	...	...	Nitro-glycerine, 1847.
Graham, Th. ... ..	1805	Glasgow.	1869	London.	Dialysis, <i>i.e.</i> , separation of crystalloid from colloid; diffusion of gases and liquids.
Liebig, Justus ... ..	1803	Darmstadt.	1873	Munich.	First model laboratory; chemistry of foods and manures.
Perkin, W. H. ... ..	...	...	...	...	Tar colours, 1856—aniline purple, rosaniline (magenta), &c.
Dumas, J. B. ... ..	1800	Alais, (Gard).	1884	...	Combining proportions all multiples of that of hydrogen; law of substitution; process of organic analysis.
Kirchoff ... ..	...	...	1887	Berlin.	Spectrum analysis, by means of which they discovered caesium and rubidium, and laid the foundation of solar and stellar chemistry.
Bunsen, R. W. ... ..	1811	Göttingen.	...	...	
Chevreul... ..	1786	Angers.	1889	Paris.	Chemistry of fats.
Newlands, J. ... ..	...	...	...	...	Periodic law of the elements, 1864.
Lockyer, Norman ...	1836	Rugby.	...	...	Elements have been formed from one substance at different temperatures (alkaline earths at highest temperature).
Crookes, W. ... ..	1832	London.	...	...	Thallium, 1861; "Protyle"—elementary matter.
Mendeljeff ... ..	...	...	...	...	Predicted new elements and correctly described their properties.
Watts, Henry ... ..	1815	...	1884	...	"Dictionary of Chemistry."
Wurtz, A. de ... ..	...	...	...	...	"Dictionnaire de Chimie."

## MAGNETISM.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Columbus, C. ... ..	A.D. 1436	Genoa.	A.D. 1506	Valladolid.	Variation of the compass, 1492.
Norman, Robt. ... ..	...	...	...	...	"Dip" of the needle, about 1576.
Hellibrand ... ..	...	...	...	...	Yearly change of variation, 1634.
Graham, Geo. ... ..	1673	near Carlisle.	1751	London.	Diurnal change, 1722.
Coulomb, C. A. ... ..	1736	Angoulême	1806	...	Variations in magnetic force, by temperature and position, determined by oscillations, 1786.
Oersted, H. C. ... ..	1777	Rudkjöbing.	1851	Copenhagen.	Electricity deflects needle, 1819; galvanometer.
Arago, F... ..	1786	near Perpignan.	1853	Paris.	Spiral conducting wire magnetises needle, 1820.
Ampère, A. M. ... ..	1775	Lyons.	1836	Marseilles.	Theory of magnetism, based on the "solenoid" (magnetic-spiral), 1830.
Faraday, M. ... ..	1794	Newington.	1867	London.	All bodies attracted or repelled by a powerful magnet, 1845.
Weber, W. E. ... ..	1804	Wittenberg.	...	...	Atlas of the earth's magnetism; each particle of a magnet is a magnet.
Sabine, Edwd. ... ..	1788	Dublin.	1883	Richmond.	Connection of aurora with earth's magnetism (magnetic storms) and with sun-spots, 1840-60.
Holtz ... ..	...	Berlin (?)	...	...	Hollow cylinder magnets are strongest and most durable.
Ross, James C. ... ..	1800	London.	1862	Aylesbury.	Magnetic poles: North—N. Lat. 70°, W. Long. 96° 43', 1831; South—S. Lat. 75° 30', E. Long. 154°, 1841.

## ELECTRICITY.

## FRICTIONAL.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Thales ... ..	B. C. 640	Miletus.	B. C. 550	Athens.	Amber rubbed with silk attracts light bodies.
Gilbert, Wm. ... ..	A.D. 1540	Colchester.	A.D. 1603	Colchester.	Glass, sulphur, resin, and other bodies when rubbed, also attract.
Otto von Guericke ... ..	1602	Magdeburg.	1686	Hamburg.	First electrical machine—a sphere of sulphur turned by one hand and pressed by the other, 1647.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Gray, Stephen ...	A. D. 1696	...	A. D. 1736	Charterhouse.	Distinguished conductors from non-conductors; sent signals through 600 feet of wire suspended by silk, 1720—36.
Dufay, C. F. ...	1698	Paris.	1739	...	Distinguished electricities of friction—the vitreous or positive, and resinous or negative, 1733.
Franklin, B. ...	1706	Boston.	1790	Philadelphia.	Lightning the same as frictional electricity; lightning conductor, 1734.
Kleist ...	...	...	...	...	Leyden jar, 1745.
Cavendish, Hy. ...	1731	Nice.	1810	Clapham.	Frictional electricity is only on the surface.
Le Sage ...	...	Geneva (?)	...	...	First telegraph (alphabetic) 24 wires, 1774.
Volta ...	1745	Como.	1826	Como.	His electrophorus first produced electricity by induction, 1775; condensing electroscope.
Coulomb, C. A. ...	1736	Angoulême.	1806	...	Torsion balance; electric attractions and repulsions are (i.) inversely as the square of the distance, and (ii.) directly as the product of the charges, 1785.
Nicholson, Wm. ...	1753	London.	1815	...	Revolving doubler, 1788—acts by induction.
Ronalds, F. ...	1785	London.	1873	Battle.	Dial telegraph, 1816—signals through eight miles of wire.
Harris, Snow ...	1792	Plymouth.	1867	...	Lightning conductors for ships, 1820.
Armstrong, Wm. ...	1810	Newcastle (?)	...	...	Hydro-electric machine, 1840.
Faraday, M. ...	1794	Newington.	1867	London.	Hydro-electric machine acts by friction of partially-condensed steam, 1840.
Thomson, Wm. ...	1824	Belfast.	...	...	Mouse-mill or replenisher, 1868; quadrant and absolute electrometers.
Wimshurst, J. ...	1832	...	...	...	Influence machine, the most efficient; seven-foot plates, 1885.

## DYNAMICAL.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Davy, H. ...	A. D. 1778	Penzance.	A. D. 1829	Geneva.	Separation of the metals of the alkalis and alkaline earths by voltaic current.
Ohm, G. S. ...	1789	Erlangen.	1854	Munich.	"Ohm's law"—strength of a current is equal to the electro-motive force divided by the resistance, 1827.
Ampère, A. M. ...	1775	Lyons.	1836	Marseilles.	Mutual attraction and repulsion of electric currents.
Faraday, M. ...	1794	Newington.	1867	London.	Induced currents, 1832.
Peltier ...	...	...	...	...	Electro-thermal effect, 1834—currents in opposite directions produce heat and cold.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Pouillet, C. ... ..	A.D. 1791	...	A.D. 1868	...	"Sine" and "tangent" galvanometers, 1837.
Jacobi, M. H. ... ..	1790	...	1851	...	Galvano-plastic process, 1837.
Joule, J. P. ... ..	1818	Salford.	1889	Sale, near Man- chester.	Electrical equivalent of mechanical power, 1841; heat generated in a conductor by a current is proportional to the resistance, and to the square of the current.
Ruhmkorff, H. D. ...	1803	...	1877	...	Best form of induction coil, 1850.
Siemens, C. Wm. ...	1823	Lenthe.	1883	London.	"Selenium eye;" electric furnace with solenoid regulator; galvanometer—oscillation avoided by combining the effect of intermittent currents.
De la Rue, W. ... ..	1815	Guernsey.	1889	...	Stratification of the electric discharge in air and other gases, at diminished pressures.
Crookes, Wm. ... ..	1832	London.	...	...	Phenomena of electric discharge in nearly perfect vacua, 1878.
Thomson, Wm. ... ..	1824	Belfast.	...	...	Electric measurement; conduction of heat affected by electric current, and differently in different metals.
Hertz, H. ... ..	1857	Hamburg.	...	...	Showed probable identity of waves of light and radiant heat with those of electricity and magnetism; exhibited reflection, refraction, interference, and polarisation of electric waves, 1887.

## BATTERIES.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Galvani ... ..	A.D. 1737	Bologna.	A.D. 1798	...	Observed contraction of muscles of the frog on contact of nerve and muscle with two metals.
Volta ... ..	1745	Como.	1826	Como.	Voltaic pile—zinc and silver, 1800; and "crown of cups," the first battery.
Zamboni ... ..	...	...	...	...	Dry pile—discs of paper tinned or silvered on one side, and moistened and rubbed with peroxide of manganese on the other, 1809.
Wollaston, W. H. ...	1766	London.	1828	...	A compact battery of separate cells—copper folded round zinc; elements can be lifted out, 1815.
Daniell, J. F. ... ..	1790	London.	1845	London.	Constant battery—amalgamated zinc with acid in porous cell, copper in solution of sulphate (with crystals) outside, 1836.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Grove, W. R. ...	A. D. 1811	...	A. D. ...	...	Platinum zinc battery—hydrogen absorbed by nitric acid in porous cell, 1839; gas battery—hydrogen and oxygen with platinum plates covered with platinum black, 1842.
Bunsen, R. ...	1811	Göttingen.	...	...	Carbon is substituted for platinum in the nitric acid battery, 1842; also with chromic acid for nitric.
Leclanché ...	...	...	...	...	Carbon zinc battery (exciting solution, sal-ammoniac), the carbon covered with a dry paste of gas carbon and peroxide of manganese.
Poggendorf ...	1796	Hamburg.	1877	Berlin.	Bichromate battery—carbon and zinc (exciting solution, bichromate of potash with sulphuric acid).
De la Rue, W. ...	1815	Guernsey.	1889	...	Zinc and chloride of silver, one liquid (sal-ammoniac); 14,400 cells, highest tension yet used.

## THERMO-ELECTRIC.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Seebeck, Thomas ...	A. D. ...	Berlin (?)	A. D. ...	...	Discovered thermo-electric effects—heat and cold produce currents in opposite directions, 1822.
Nobili, L. ...	1784	...	1835	...	Thermo-electric pile, 1831.
Becquerel, A. C. ...	1788	Chatillon-sur-Loing.	1878	...	Thermo-electric battery—German silver in cold water is connected with artificial sulphide of copper heated from a gas flame.
Clamond ...	...	...	...	...	Thermo-electric battery—alloy of antimony (with zinc or bismuth) and iron. (6,000 cells have been used.)

## STORAGE.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Planté, Gaston ...	A. D. ...	...	A. D. 1889	...	Sheets of lead separated by felt, wet with dilute acid—rolled, 1860.
Faure, M. C. A. ...	...	near Grenoble.	...	...	Coated sheets of lead with red lead paste, 1881.

## DYNAMOS, &amp;c.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Faraday, M. ... ..	A.D. 1794	Newington.	A.D. 1867	London.	Movement of part of a circuit in a magnetic field causes a current, 1831.
Pixii ... ..	...	Paris (?)	...	...	First magneto-electric machine—magnet rotates, 1832.
Jacobi, M. H. ... ..	1790	...	1851	...	Electro-magnetic motor; with 128 Grove cells he propelled boat on Neva, 1839.
Clarke ... ..	...	...	...	...	Improved magneto-electric machine—coil rotates.
Siemens, E. Werner ...	1816	Lenthe.	...	...	"Siemens's armature"—used at first with permanent magnets, 1854; also the dynamo (self-exciting), 1866; first electric railway, Berlin to Lichterfelde, 1881.
Pacinotti... ..	1841	Pisa.	...	...	Ring inductor, 1862.
Wild, H. ... ..	...	...	...	...	A separate magneto-electric machine is used to excite an electro-magnet, 1865.
Wheatstone, Ch. ...	1802	Gloucester.	1875	Paris.	Dynamo—current produced strengthens its own electro-magnets, 1866.
Gramme ... ..	...	...	...	...	Dynamo—the core of the armature is a coil of soft iron wire, the two ends soldered together; on this, wire is wound in separate bobbins, so as to give off many currents in one revolution: it is used for continuous current, and alternating (for lighting). Shown to be a motor when reversed, 1873.
Siemens, C. Wm. ...	1823	Lenthe.	1883	London.	Dynamo—drum armature; currents collected many times in a revolution, about 1876. Motor.
Brush, C. F. ... ..	1849	Euclid (Ohio).	...	...	Dynamo—armature, a soft iron ring deeply channelled, eight bobbins of wire wound in deep notches, 1878—79.
Ferranti ... ..	...	...	...	...	Dynamo—armature, a long copper ribbon coiled in a wavy line, 1883; electric mains—concentric copper tubes, for out and return current, insulated and enclosed in flexible iron tube.

## ELECTRIC LIGHTING AND WELDING.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Davy, H ... ..	A. D. 1778	Penzance.	A. D. 1829	Geneva.	Voltaic arc (2,000 couples), charcoal points, 1801.
Foucault ... ..	...	...	...	...	Invented regulator—solenoid and shunt current, 1858.
Jablochkoff ... ..	1847	Serdobsk.	...	...	"Candle"—two carbons, separated by clay, 1878.
Swan, J. W. ... ..	1828	Sunderland	...	...	{ Glow lamps—carbon filaments of different kinds in Sprengel vacuum heated by current, 1878.
Edison, T. A. ... ..	1847	Milan (Ohio).	...	...	
Thomson, Elihu... ..	1853	Manchester.	...	...	Electric welding, 1887—applicable to most metals and alloys.

## TELEGRAPH, TELEPHONE, &amp;c.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Sömmering, S. T. ... ..	A. D. 1755	Thorn.	A. D. 1830	Frankfort-on-the-Main.	First used Voltaic pile for telegraph—signals produced by the decomposition of water, 1809.
Oersted, H. C. ... ..	1777	Rudkjøbing.	1851	Copenhagen.	Single-needle galvanometer, 1819.
Schweigger ... ..	...	...	...	...	Astatic needle galvanometer, with many coils of wire; signalling by repetition and varying duration of currents, 1820.
Gauss, K. F. ... ..	1777	Brunswick.	1855	Göttingen.	Electro-magnetic telegraph worked 1½ miles, 1833.
Steinheil ... ..	...	Munich (?)	...	...	Return wire not needed—earth suffices, 1837.
Cooke, W. F. ... ..	1806	Ealing.	1879	Farnham.	Single-needle instrument; first public telegraph on Great Western Railway, 1837.
Wheatstone, Ch. ... ..	1802	Gloucester.	1875	Paris.	"A B C" dial telegraph, 1840; printing telegraph, 1841; automatic transmitter—perforated ribbon, 1858; electric transmission of vibration of tuning-forks to those of the same note, 1859.
Morse, S. F. B.... ..	1791	Charlestown (Mass.).	1872	New York.	Morse alphabet, 1835; telegraph not erected till 1844; sender and inker, 1843.
Jacobi, M. H. ... ..	1790	...	1851	...	Introduced india-rubber for insulating.



	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Siemens, E. Werner ...	A. D. 1816	Lenthe.	...	...	Introduced gutta-percha for covering wires, 1847; duplex telegraphy carried out practically, 1857.
Bain, Alex. ...	1810	near Wick.	1877	...	Electro-chemical telegraph—records by decomposition of various compounds, 1846—50; electric clocks, 1851.
Brett, Jacob ...	...	...	...	...	The earliest submarine cables—Dover to Calais, 1851.
Gintl ...	...	Vienna (?)	...	...	Duplex telegraphy—two simultaneous messages in one wire in opposite directions, 1853.
Stark ...	...	Vienna (?)	...	...	Quadruplex telegraphy—two messages both ways, 1855.
Thomson, Wm....	1824	Belfast.	...	...	Marine mirror-galvanometer—a minute magnet and mirror, together weighing $1\frac{1}{2}$ grains, in a coil of many thousand turns of the finest wire—extremely sensitive, 1858; siphon recorder—the submarine current, passing through a small coil (suspended between the poles of a powerful magnet), moves it, and with it the capillary siphon, from which electrified ink spurts on the moving paper, 1868.
Siemens, C. Wm. ...	1823	Lenthe.	1883	London.	Machinery for the construction and paying-out of deep-sea cables.
Reiss, Philip ...	...	...	...	...	The first telephone; vibration of parchment diaphragm makes and breaks contact by means of a platinum wire, 1861—62.
Smith, Willoughby ...	...	...	...	...	Light changes the electrical resistance of selenium, 1873.
Bell, A. Graham ...	1847	Edinburgh.	...	...	Speaking telephone—iron diaphragm in front of permanent magnet, round which the wire of transmission is coiled, 1877; photophone—a telephone in which a ray of light (reflected from the mouth-piece diaphragm and received on a selenium cell) is substituted for a wire, 1880.
Edison, Th. A. ...	1847	Milan (Ohio).	...	...	Quadruplex telegraphy carried out practically; telephone—carbon transmitter, compressed lampblack; "loud speaking" receiver—a wet cylinder of chalk revolving, the wire currents vary the friction of a spring connected to the mica diaphragm, 1878.
Hughes, D. E. ...	1831	<del>U.S.</del> London.	...	...	Type printer—alphabet revolves, and the signal prints the required letter; microphone—vibration of any part of a circuit in loose contact varies the current largely, and magnifies sound, 1878; induction balance.
Cowper, E. A. ...	...	...	...	...	Writing telegraph—paper moves; length of co-ordinates determines position of recording pen, 1878.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Gray, Elisha ... ..	A. D. 1835	Barnsville (Ohio).	A. D. ...	...	Multiplex telegraphy—five tuning-forks at each station, their vibrations ink-written. Multiplex telegraphy—sending and receiving ends of wire sweep synchronously round a circle of five parts, allotted to each pair of operators.
Meyer ... ..	...	...	...	...	

## MISCELLANEOUS PHYSICS.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Newton, I. ... ..	A. D. 1642	Woolsthorpe.	A. D. 1727	Kensington.	"Principia," 1687; established law of gravitation inversely as the square of the distance. Laws of motion: (1) inertia; (2) force measured by change of inertia; (3) action and reaction are equal. Causes of tides, 1740.
Euler, Leonard ... ..	1707	Basle.	1783	St. Petersburg.	
D'Alembert ... ..	1717	Paris.	1783	...	Cause of winds, 1747. Tidal friction must lengthen sidereal day—(since proved).
Kant, Emmanuel ... ..	1724	Königsberg.	1804	near Königsberg.	
Saussure, H. ... ..	1740	Geneva.	1799	...	Measured movement of glaciers, 1779—96. Atwood's machine, measuring accelerating force of gravitation, 1784.
Atwood, G. ... ..	1746	...	1807	Westminster.	
Cavendish, H. ... ..	1731	Nice.	1810	Clapham.	Gravitation experimentally shown by leaden sphere and copper ball with torsion balance.
Maskelyne, N. ... ..	1732	London.	1811	...	Shown by plumb-line the attraction of a mountain (Schiehallien), 1774.
Wells, C. W. ... ..	1755	Charleston.	1817	London.	Essay on dew, 1814.
Chladni, E. F. ... ..	1756	Wittenberg.	1827	Breslau.	Phenomena of shooting stars caused by meteoric bodies of cosmic origin heated by atmospheric friction, 1819.
Daniell, J. F. ... ..	1790	London.	1845	London.	Hygrometer, 1820.
Reid, W.... ... ..	1791	Fife.	1858	...	"Law of Storms," 1838; law of storms applied to navigation, 1849.
Faraday, M. ... ..	1794	Newington (Surrey).	1867	London.	Regelation—the moulding of melting ice, 1850.
Fitzroy, R. ... ..	1805	Suffolk.	1865	Norwood.	Weather charts and systematic storm warnings, 1857.
Pouillet, C. ... ..	1791	...	1868	...	Pyroheliumeter—measuring quantity of sun's heat.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Foucault... ..	A. D. 1819	...	A. D. 1868	...	Earth's rotation demonstrated by the slow change of the plane of a pendulum's oscillations, 1851.
Secchi, A. ... ..	1818	Reggio.	1878	Rome.	Meteorograph, 1867.
Maxwell, J. Clerk ... ..	1831	Edinburgh.	1879	Cambridge.	Mathematical, molecular physics.
Siemens, C. Wm. ... ..	1823	Lenthe.	1883	London.	Solar heat constantly replenished by the dissociation of gases by light, in the absence of pressure, and their re-combustion, 1881; bathometer—measured approximately depth of ocean by difference of attraction of earth and water; horizontal attraction meter, 1876.
Grove, W. R. ... ..	1811	...	...	...	"Correlation of Physical Forces," 1842.
Helmholtz ... ..	1821	Potsdam.	...	...	Solar heat brought to the surface by convection and augmented by contraction; conservation of energy.
Huggins, Wm. ... ..	1824	London.	...	...	Space filled with gases, same as those occluded in meteorites.
Thomson, W. ... ..	1824	Belfast.	...	...	Solar heat of meteoric origin, 1854; molecular physics; polar ice-caps affect sea-level.

## OPTICS.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Ptolemy, C. ... ..	A. D. 70	Pelusium.	A. D. 161	...	First treatise on optics.
Alhazen ... ..	...	Arabia.	1038	Cairo.	Aërial refraction.
Bacon, Roger ... ..	1214	Ichester.	1292	Oxford.	Magnifying glasses; spectacles.
Jansen ... ..	...	Middleburg.	...	...	Microscope, 1590.
Porta, G.... ... ..	1550	Naples.	1615	Naples.	Camera obscura, 1600.
Snellius, W. ... ..	1591	Leyden.	1626	...	Index of refraction.
Galileo ... ..	1564	Pisa.	1642	Florence.	Telescope, 1609.
Kircher, A. ... ..	1602	near Fulda.	1680	...	Magic-lantern.
Grimaldi, G. F.... ...	1606	Bologna.	1680	Rome.	Interference of light, 1665, suggesting undulatory theory.
Mariotte ... ..	...	Dijon.	1684	Paris.	Blind spot in eye.
Huyghens ... ..	1629	Hague.	1695	Hague.	First enunciated the wave theory of light.
Bartholine, E. ... ..	1625	Roeskilde.	1698	...	Double refraction, 1669.
Tschirnhausen ... ..	1651	Upper Lusatia.	1708	Upper Lusatia.	33-inch burning-glass (melting iron), 1680.
Römer, Oläus ... ..	1644	Aarhuus (Jutland).	1710	Copenhagen.	Found velocity of light from eclipses of Jupiter's satellites, 1675.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
	A.D.		A.D.		
Leeuwenhoeck ...	1632	Delft.	1723	Delft.	Construction and use of the microscope.
Newton, I. ...	1642	Woolsthorpe.	1727	Kensington.	Reflecting telescope, 1668.
Dollond, John ...	1706	London.	1761	London.	Achromatic telescope, 1758.
Bradley ...	1693	Sherborne (Glo.).	1762	near Stroud.	Explained aberration of light of fixed stars, 1727.
Lambert, J. H. ...	1728	Mühlhausen.	1777	Berlin.	Photometry, 1760.
Ritter ...	1776	near Liegnitz.	1810	Munich.	Actinic or photographic rays, 1801.
Malus, E. L. ...	1775	Paris.	1812	...	Polarisation by reflection, 1808.
Murdoch ...	...	Cornwall.	1839	...	Illuminating gas, 1792.
Monge, Gaspard ...	1746	Beaune.	1818	...	Theory of mirage, 1798.
Fraunhofer, Jos. ...	1787	Straubing.	1826	Munich.	Mapped 590 lines in solar spectrum, 1815.
Herschel, W. ...	1738	Hanover.	1827	Slough.	Calorific rays of the solar spectrum.
Fresnel, A. J. ...	1788	Brogie (Eure).	1827	near Paris.	Compression, sole cause of double refraction; dioptric lighthouses, 1819.
Wollaston, W. H. ...	1766	London.	1828	...	Camera lucida, 1804.
Young, T. ...	1773	Milverton.	1829	London.	Established the wave theory of light, 1801.
Jacob ...	...	...	...	...	Rods and cones of the retina, 1819.
Drummond, Th. ...	1797	Edinburgh.	1840	Dublin.	Lime-light—oxy-hydrogen flame on compressed lime, 1826.
Daguerre ...	1789	Cormeilles.	1851	near Paris.	Daguerreotype, on silver plate, developed by mercurial vapour, 1839.
Arago ...	1786	near Perpignan.	1853	Paris.	Colours of thin crystals (polariscope).
Biot ...	1774	Paris.	1862	...	Rotary polarisation of light—to right and left, 1815.
Faraday, M. ...	1794	Newington (Surrey).	1867	...	Magnetisation of light—rotary polarisation produced in strong magnetic field, 1845.
Brewster, D. ...	1781	Jedburgh.	1868	near Melrose.	Law of the polarising angle; colours of compressed glass; polyzonal lighthouse lens, 1812; kaleidoscope, 1817; refracting stereoscope, 1854.
Langenbeck, Max ...	...	...	1851	...	Lens changes shape by compression, thus focussing the eye.
Wheatstone, C. ...	1802	Gloucester.	1875	Paris.	Reflecting stereoscope, 1838.
Talbot, W. H. F. ...	1800	...	1877	near Chippenham.	Talbotype—paper photography, 1839.
Siemens, C. Wm. ...	1823	Lenthe.	1883	London.	Electric light on vegetation, 1880; selenium eye.
Kirchoff ...	...	...	1887	Berlin.	Spectroscope; the bright lines produced by an incandescent element correspond to the dark lines seen when a white light shines through its vapour, 1860.
Bunsen, R. ...	1811	Gottingen.	...	...	
Stokes, G. G. ...	1819	Sligo.	...	...	Fluorescence, 1852; retardation of the ultra violet ray.
Tyndall, J. ...	1820	near Carlow.	...	...	Calorescence, 1865; acceleration of the ultra red rays, producing from darkness a vivid spectrum.
Helmholtz ...	1821	Potsdam.	...	...	Ophthalmoscope, 1851.

## ASTRONOMY.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Thales ... ..	B.C. about 640	Miletus.	B.C. 545	Athens.	He taught that the earth was a globe, and divided it into zones; he predicted eclipses (learned in Egypt).
Anaximander ... ..	610	Miletus.	546	...	Proved the obliquity of the ecliptic and the turns of the sun (tropics) by means of the sun-dial and celestial globe.
Meton ... ..	...	Athens.	...	...	Metonic cycle (235 lunations=19 years), 427 B.C.
Aristarchus ... ..	...	Samos.	...	...	Sun still, earth revolves round it, 280 B.C.
Erastosthenes ... ..	276	Cyrene.	194	...	Determined the circumference of the earth by measuring a degree, also the obliquity of the ecliptic; both with great exactness.
Hipparchus ... ..	about 160	Nice (Bithynia).	125	...	Catalogued fixed stars; observed the precession of the equinox; measured by latitude and longitude.
Ptolemy, Claudius ... ..	A.D. about 70	Pelusium.	A.D. 161	...	Ptolemaic system; revised Hipparchus' star catalogue.
Bacon, Roger ... ..	1214	Ilchester.	1292	Oxford.	Urged reformation of the calendar.
Regiomontanus ... .. (John Müller) ... ..	1436	Königs- berg.	1476	Rome.	Observations for the reformation of the calendar carried out by Gregory XIII. in 1582.
Copernicus ... ..	1473	Coburg. Thorn.	1543	...	Founder of modern astronomy (Copernican system); "De Orbium Cælestium Revolutionibus," 1543.
Brahe, Tycho ... ..	1546	near Copen- hagen.	1601	...	Accurate observations, and exact calculation of eclipses.
Snellius, W. ... ..	1591	Leyden.	1626	...	Measured arc of the meridian.
Kepler, J. ... ..	1571	near Stutgard.	1630	Ratisbon.	"Kepler's laws:" (1) elliptic orbits; (2) equal areas; (3) periodic times and mean distances, 1609—18.
Horrocks, Jer. ... ..	1619	near Liverpool.	1641	...	Transit of Venus, 1633.
Galileo ... ..	1564	Pisa.	1642	Florence.	Telescope; Jupiter's satellites, 1610; phases of Mercury, Venus and Mars; Milky Way, a zone of minute stars.
Gassendi ... ..	1592	near Digne.	1655	Paris.	First who observed transit of Mercury, 1631.
Huyghens, C. ... ..	1629	Hague.	1695	Hague.	Ring of Saturn, and one satellite, 1655.
Römer, O. ... ..	1644	Aarhuus (Jutland).	1710	Copen- hagen.	Velocity of light discovered by difference of observed and calculated time of eclipses of Jupiter's satellites, 1675.
Cassini, Giov. D ... ..	1625	near Nice.	1712	...	Four of Saturn's satellites; rotation of Jupiter, 1667.
Flamsteed ... ..	1646	Denby (Derby- shire).	1719	...	"Historia Cælestis Britannica;" catalogue of 3,000 stars; first Astronomer Royal.

	BIRTH.		DEATH.		
	DATE.	PLACE.	DATE.	PLACE.	
Newton ... ..	A.D. 1642	Woolsthorpe.	A.D. 1727	Kensington.	Gravitation—a universal law of matter (partly proved, 1670; fully, 1687). Rotation (1676) and parallax of sun, 1702; first predicted return of comets; determination of longitude by lunar distances, 1720.
Halley, Edmd. ... ..	1656	London.	1742	Greenwich.	
Bradley, J. ... ..	1693	Sherborne (Glo.)	1762	near Stroud.	Nutation of the earth's axis, 1748.
Lacaille, N. L. de ... ..	1713	Ardennes.	1762	...	Mapped 9,800 stars of the southern hemisphere; table of eclipses for 1,800 years.
D'Alembert ... ..	1717	Paris.	1783	...	Explained precession of the equinox.
Bailly, J. S. ... ..	1736	Paris.	1793	Paris.	"History of astronomy," 1775.
Maskelyne, N. ... ..	1732	London.	1811	...	Weight of earth, 1774.
Herschel, W. ... ..	1738	Hanover.	1822	Slough.	Uranus, 1781, and its satellites; two of Saturn's satellites, 5,000 star-clusters and nebulae; proper motion of the solar system; star systems.
Delambre ... ..	1749	Amiens.	1822	Paris.	Movements of Jupiter's satellites; history of astronomy, 1817—21.
Piazzi, G. ... ..	1746	Ponte (Valtelline).	1826	Naples.	Ceres (first-discovered asteroid), 1801; catalogue of 7,646 stars.
Olbers, H. ... ..	1758	near Bremen.	1840	Bremen.	Pallas, 1802; and Vesta, 1807; list of comets and their orbits.
Harding, C. L. ... ..	1765	...	1834	...	Juno, 1804.
Laplace, P. S. ... ..	1749	Calvados.	1827	Paris.	"Mécanique Céleste," popularised in his "Exposition du Système du Monde."
Henderson, T. ... ..	1798	Dundee.	1844	Edinburgh.	Parallax of the double star $\alpha$ Centauri.
Bessel, F. W. ... ..	1784	Minden.	1846	...	Parallax of fixed star, 61 Cygni, 1841.
Struve, F. G. ... ..	1793	Altona.	1864	Pulkowa.	Parallax of 61 Cygni, 1853, and $\alpha$ Lyrae; double stars.
Encke, J. F. ... ..	1791	Hamburg.	1865	...	Orbits and perturbations of comets; resistance of the ether of space, 1829.
Bond, G. P. ... ..	1826	Dorchester (Mass.).	1865	Cambridge (Mass.).	Satellite of Saturn, 1848; first celestial photography; moon, 1851.
Herschel, J. F. W. ... ..	1792	Slough.	1871	Hawthurst.	Stars of the southern hemisphere, 1834—38.
Mädler, J. H. ... ..	1794	Berlin.	1874	Hanover.	"Allgemeine Selenographie" with maps, 1834—37.
Le Verrier ... ..	1811	St. Lô (Manche).	1877	Paris.	From the perturbations of the outer planets, they independently proved the existence, and assigned the position of the planet Neptune.
Adams, J. Couch ... ..	1818	near Bodmin.	...	...	
Galle ... ..	...	Berlin (?)	...	...	First observed Neptune, thus verifying calculations, 1846.
Lassell ... ..	1799	Bolton.	1880	...	Neptune's satellite, 1846; two of Uranus, 1847; and one of Saturn, 1848.
De La Rue, Warren ... ..	1815	Guernsey.	1889	...	Celestial photography.
Nasmyth, J. ... ..	1808	Edinburgh.	1890	London.	Best monograph on the moon, 1874.
Airy, G. B. ... ..	1801	Alnwick.	...	...	Solar distance 92,600,000 miles, 1878.
Huggins, Wm. ... ..	1824	London.	...	...	Spectrum of fixed stars and their movement, approaching or receding.
Lockyer, N. ... ..	1836	Rugby.	...	...	Solar spectrum.









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